

KIET Group of Institutions, Delhi-NCR, Ghaziabad Internal Quality Assurance Cell (IQAC)



((An ISO – 9001: 2015 Certified & NAAC'A+' - Cycle 2)

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**Department of Computer Science & Engineering** 



\* Alment withroad \*

# **KIET Group of Institutions, Ghaziabad**

## **Department of Computer Science & Engineering**

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#### **Course Outcome (Sensor & Instrumentation, KOE-034)**

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level	Knowledge Category (KC)
After comple	etion of the course, the student will be able to	(BL)	
C01	Able to understand the use of sensors for measurement of displacement, force and pressure.	Understand	С, Р
CO2	Able to understand the uses of sensors in industry for measurement of temperature, position, accelerometer, vibration sensor, flow and level.	Understand	С, Р
CO3	Able to apply the concept of virtual instrumentation in automation industries.	Apply	F, P
CO4	Able to understand, Identify and use data acquisition methods.	Understand	С, Р
CO5	Able to comprise intelligent instrumentation in industrial automation.	Understand	С, Р

### **<u>CO-PO Mapping (Sensor & Instrumentation, KOE-034)</u></u>**

Course					Prog	ramme	Outco	me (P	))				PSO	PSO
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	2	2	2	-	-	-	-	-	-	2	-	3	2
CO-2	3	3	2	3	2	-	-	-	-	-	3	-	2	2
CO-3	3	2	2	3	3	3	-	-	-	-	2	-	2	2
CO-4	2	3	2	2	2	3	2	-	-	-	3	-	2	2
CO-5	2	2	2	2	2	2	-	-	-	-	2	-	2	2
PO Target	2.6 0	2.4 0	2.00	2.4 0	2.2 5	2.6 7	2.0 0	0	0	0	2.40	0	2.2 0	2.0 0



## Course Outcome (Universal Human Value, KVE-301)

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level	Knowledge
After compl	etion of the course, the student will be able to	(BL)	cutegory (ite)
C01	Understand the essential complementarities between 'VALUES" and 'SKILLS' with its relation of engineering concept.	Understand	Conceptual
CO2	Analyze the basic aspirations of all human beings keeping social environmental, economic, political scenario.	Analyze	Conceptual
CO3	Apply the development of a holistic perspective among students towards life, profession and happiness in light of truth.	Apply	Conceptual
C04	Apply the value based living in a natural way using technological advancement.	Apply	Conceptual
C05	Analyze the implications of holistic view in terms of ethical human conduct.	Analyze	Conceptual

## **<u>CO-PO Mapping (Universal Human Value, KVE-301)</u></u>**

Course Code:	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	-	-
CO-2	-	-	-	-	-	3	2	3	2	1	1	2	-	-
CO-3	-	-	-	-	-	3	2	3	2	1	1	2	-	-
CO-4	-	-	-	-	-	3	2	3	2	1	1	2	-	-
CO-5	-	-	-	-	-	3	2	3	2	1	1	2	-	-
PO Target	-	-	-	-	-	2.60	1.80	2.60	1.80	1	1	1.80	-	-



**Department of Computer Science & Engineering** 

## Course Outcome (Data Structures, KCS301)

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After complet	ion of the course, the student will be able to	Process Level (BL)	(KC)
C01	Select Array and Linked list in efficient manner and determine the computational efficiency of the algorithms.	Evaluate	Conceptual, Procedural
C02	Analyze the concepts of Stack and queue data structure in problem solving.	Analyze	Conceptual, Procedural
C03	Explore Tree data structure and its variants.	Analyze	Conceptual, Procedural
CO4	Identify the importance and application of Graph data Structure with problem solving techniques.	Analyze	Conceptual, Procedural
C05	Apply various searching and sorting algorithms	Apply	Conceptual, Procedural

### **<u>CO-PO Mapping (Data Structures, KCS301)</u>**

Course Code:					Progr	amme	Outco	ome (P	0)				PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	3	3	3	3	2	-	-	-	-	3	3	3	3	3
CO2	3	3	3	2	2	-	-	-	-	3	3	3	3	3
CO3	3	3	3	3	2	-	-	-	-	3	3	3	3	3
CO4	3	3	3	3	3	-	-	-	-	3	3	3	3	3
CO5	3	3	3	3	3	-	-	-	-	2	3	3	3	3
PO Target	3	3	3	2.8	2.4	-	-	-	-	2.8	3	3	3	3



#### **Course Outcome (Computer Organization and Architecture, KCS302)**

<b>CO No.</b> After comple	<b>Statement of Course Outcome</b> etion of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
C01	Summarize the fundamental components of basic computer system and its organization	Understand	Factual, Conceptual
C02	Apply arithmetic and logical microoperations on binary number system	Apply	Conceptual, Procedural
CO3	Analyze control unit design and concept of pipelining	Analyze	Conceptual, Procedural
CO4	Examine memory hierarchy and numerical problem	Analyze	Factual, Conceptual, Procedural
C05	Analyze the concept of input output organization.	Analyze	Factual, Conceptual, Procedural

#### **<u>CO-PO Mapping (Computer Organization and Architecture, KCS302)</u></u>**

Course		Programme Outcome (PO)												PSO
Code:	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	3	2	2	2	2	-	-	-	-	-	-	2	-	-
CO-3	2	2	2	2	2	-	-	-	-	-	-	2	-	-
CO-4	3	2	2	2	2	-	-	-	-	-	-	2	-	-
CO-5	2	2	2	2	2	-	-	-	-	-	-	2	-	-
PO Target	2.6	2	2	2	2	-	-	-	-	-	-	2	2	2



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

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After comple	tion of the course, the student will be able to	(BL)	Category (KC)
C01	Illustrate basic mathematical objects and their properties.	Analyze	Conceptual & Procedural
CO2	Examine the structures and properties of modern algebra.	Apply	Conceptual & Procedural
C03	Solve substantial experience of formal and logical arguments.	Apply	Conceptual & Procedural
CO4	Justify the mathematical properties via the formal language of propositional and predicate logic.	Evaluate	Conceptual & Procedural
C05	Visualize the problems using graphs and trees as a tool.	Apply	Conceptual & Procedural

#### **<u>CO-PO Mapping - Discrete Structures & Theory of Logic (KCS 303)</u></u>**

Course	Programme Outcome (PO)												PSO	PSO
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO-2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
CO-3	3	-	2	-	-	-	-	-	-	-	-	2	-	-
CO-4	3	2	2	3	-	-	-	-	-	2	-	2	-	2
CO-5	3	2	3	2	-	-	-	-	-	2	-	2	-	2
PO Target	2.80	2	2.33	2.50	-	-	-	-	-	2	-	2	-	2



#### **Course Outcome (Data Structure using C Lab, KCS351)**

CO No.	Statement of Course Outcome	Bloom's Cognitive Processes Level	Knowledge
After completo	etion of the course, the student will be able	(BL)	Lategory (KC)
C01	Implement various operations on Array, Linked List searching and sorting.	Evaluate	Conceptual, Procedural
CO2	Implement the concept of Stack and Queue using Array and LinkedList.	Analyze	Conceptual, Procedural
CO3	Implement the concept of Tree and Graph Data Structure using Array and LinkedList.	Analyze	Conceptual, Procedural

## **<u>CO-PO Mapping (Data Structure using C Lab, KCS351)</u></u>**

Course		Programme Outcome (PO)											PSO	PSO
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	3	2	3	2	-	-	-	-	3	2	3	3	3
CO-2	3	2	2	2	3	-	-	-	-	3	3	2	3	2
CO-3	3	2	3	3	2	-	-	-	-	3	2	3	2	3
PO Target	3	2.3	2.3	2.6	2.3	-	-	-	-	3	2.3	2.6	2.6	2.6



**Department of Computer Science & Engineering** 

## Course Outcome (COA Lab, KCS-352)

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level	Knowledge Category (KC)
After comple	tion of the course, the student will be able to		
C01	Design basic digital circuits	Apply (BL-3)	Factual, Procedural
CO2	Design 8 bits I/O, ALU and Adder & Subtractor.	Apply (BL-3)	Factual, Conceptual, Procedural
CO3	Analyze the concept of control unit and Multiplexer/Decoder	Analyze (BL-4)	Conceptual, Procedural
CO4	Analyze the concept of binary to gray code converter & gray to binary code converter.	Analyze (BL-4)	Conceptual, Procedural

### CO-PO Mapping (COA Lab, KCS-352)

Course	urse Programme Outcome (PO)											PSO	PSO	
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	1	2	-	-	-	-	-	-	-	-	-	1	1	-
CO-2	2	2	1	-	-	2	-	-	-	-	-	2	1	-
CO-3	1	2	2	-	-	-	-	-	-	-	-	1	1	-
CO-4	1	2	1	2	-	-	-	-	-	-	-	1	1	-
PO Target	1.25	2.00	1.33	2.00	-	2.00	-	-	-	-	-	1.25	1	-

## <u>Course Outcome - Discrete Structures & Theory of Logic Lab</u> <u>(KCS 353)</u>

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level	Knowledge Category (KC)
After comple	tion of the course, the student will be able to	(BL)	
C01	Implement various operations of set, Boolean algebra, recursion, and mathematical induction.	Apply	Conceptual & Procedural
CO2	Implement the concept of minimum cost spanning tree and shortest path in graphs.	Apply	Conceptual & Procedural
C03	Illustrate permutation, combination, and probability for various problems.	Apply	Conceptual & Procedural

## <u>CO-PO Mapping - Discrete Structures & Theory of Logic Lab</u> <u>(KCS 353)</u>

Course	Course Programme Outcome (PO)											PSO	PSO	
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	-	-	-	3	-	-	-	2	-	-	2	2	-
CO-2	3	-	-	-	3	-	-	-	2	-	-	2	2	3
CO-3	3	3	-	2	3	-	-	-	2	-	-	2	2	3
PO Target	3	3 3 - 2 3 2 - 2											2	3



**Department of Computer Science & Engineering** 

Course Outcome (	Mini Project	KCS-354)

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After comple	etion of the course, the student will be able to	Process Level (BL)	Category (KC)
C01	Discover potential research areas in the field of IT	Understand	Factual
CO2	Compare and contrast the several existing solutions for research challenge	Evaluate	Conceptual
CO3	Demonstrate an ability to work in teams and manage the conduct of the research study	Analyze	Procedural
CO4	Formulate and propose a plan for creating a solution for the research plan identified	Evaluate	Procedural
CO5	To report and present the findings of the study conducted in the preferred domain	Evaluate	Procedural

## **<u>CO-PO Mapping (Mini Project, KCS-354)</u>**

Course	Programme Outcome (PO)											PSO	PSO	
Code:	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	-	-	3	-	2	3	2	2
CO-5	2	-	-	-	-	-	-	-	2	-	2	-	-	-
PO Target	2.80	3	3	3	3	1.67	0	0	2.4	2	2	2.75	2.25	2.25



#### **Course Outcome (Database Management System, KCS501)**

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After comple	etion of the course, the student will be able to	(BL)	Lategory (KL)
C01	Acquire the knowledge of database design methodology for implementing real life applications.	Apply	Conceptual & Procedural
CO2	Design an information model expressed in the form of ER diagram.	Create	Conceptual, Procedural & Metacognitive
CO3	Apply structured query language to automate the real time problems of databases.	Apply	Conceptual & Procedural
CO4	Analyze the redundancy problem in database tables using normalization.	Analyse	Conceptual & Procedural
C05	Identify the broad range of database management issues including data integrity, security and recovery in terms of transactions.	Analyse	Conceptual & Procedural

## **<u>CO-PO Mapping (Database Management System, KCS501)</u></u>**

Course	e Programme Outcome (PO)											PSO	PSO	
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	-	-	-	2	-	-	1	1	-	1	2	2	-
CO-2	2	1	3	2	3	-	1	1	1	3	2	1	-	3
CO-3	3	-	-	-	3	-	-	1	-	1	1	1	-	-
CO-4	2	3	-	3	-	-	-	-	-	-	-	1	-	2
CO-5	2	3	-	3	-	-	-	-	-	-	-	1	-	2
PO Target	2.4	2.33	3	2.67	2.67	0	1	1	1	2	1.33	1.20	2	2.33



## Course Outcome (Compiler Design, KCS-502)

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category		
After com	pletion of the course, the student will be able to	Level (BL)	(KC)		
C01	Acquire knowledge of different phases and passes of the compiler and implement phases using LEX and YACC tools.	Apply	Conceptual & Procedural		
CO2	Design and implement Top-Down (LL) and Bottom-up (SLR, CLR, and LALR) parsers.	Create	Conceptual, Procedural & Metacognitive		
CO3	Apply syntax-directed translation method using synthesized and inherited attributes to generate intermediate code.	Apply	Conceptual & Procedural		
CO4	Analyze data structures used for symbol table, runtime organization and errors in phases of compiler.	Analyse	Conceptual & Procedural		
CO5	Apply code optimization and generation techniques to create target code	Apply	Conceptual & Procedural		

## **<u>CO-PO Mapping (Compiler Design, KCS-502)</u>**

Course Code:				PSO	PSO									
KC5-302	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	3	-	-	-	2	-	-	1	1	-	1	2	2	-
CO2	2	1	3	2	3	-	1	1	1	3	2	1	-	3
CO3	3	-	-	-	3	-	-	1	-	1	1	1	-	-
CO4	2	3	-	3	-	-	-	-	-	-	-	1	-	2
CO5	2	3	-	3	-	-	-	-	-	-	-	1	-	2
PO Target	2.4	2.3	3	2.6	2.6	0	1	1	1	2	1.3	1.2	2	2.3



**Department of Computer Science & Engineering** 

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

CO No.	Course Outcome (CO)	Revised Bloom's Cognitive Process Level (BL)	Knowledge Category* (KC)
C01	Analyze running time of algorithms using asymptotic methods.	Analyze	С, Р
CO2	Analyze advanced data structure algorithms to calculate their complexities.	Analyze	С, Р
CO3	Create solutions of Optimization problems using Dynamic Programming and Greedy Approach.	Create	Р, М
CO4	Apply backtracking and branch & bound approaches for finding efficient solutions.	Apply	Р
CO5	Understand the concepts of NP Completeness and find alternate solutions using Randomized and Approximation Algorithms.	Understand	С, Р

\*Knowledge Categories (KCs): F-Factual, C-Conceptual, P-Procedural, M-Metacognitive

<b>CO-PO Manning</b>	(Design and Analy	vsis of Algorithr	n. KCS-503)
<u>uo i o mapping</u>	Design and man	<u>y 515 OI IIIGOI ICIII</u>	$\mathbf{n}$ $\mathbf{n}$ $\mathbf{n}$

Course Code:	Programme Outcome (PO)													PSO/ APO
KCS503	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	-	3	-	2	-	-	-	1	-	-	-	3	-	1
CO2	-	3	-	3	2	-	-	-	-	-	-	2	1	1
CO3	3	1	3	-	2	-	-	-	1	1	1	2	-	2
CO4	2	-	-	-	-	-	-	-	1	-	1	1	-	-
C05	-	-	-	1	2	-	-	-	-	-	-	1	1	-
PO Target	2.5	2.3	3	2	2	-	-	-	1	1	1	1.8	1	1.3



**Department of Computer Science & Engineering** 

#### **Course Outcome (Web Designing, KCS 052)**

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level	Knowledge Category (KC)
After comple	tion of the course, the student will be able to	(BL)	
C01	Understand the principle of web designing and types of web sites.	Understand	Conceptual
C02	Use of HTML tags for designing web pages.	Apply	Procedural
C03	Apply the elements of CSS to format the web pages.	Apply	Procedural
CO4	Design interactive and dynamic web pages using JavaScript.	Create	Metacognitive
CO5	Apply concept of SEO in web development.	Apply	Procedural

## **<u>CO-PO Mapping (Web Designing, KCS 052)</u>**

Course	se Programme Outcome (PO)												PSO	PSO
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	2	2	2	-	-	-	-	-	-	-	-	2	-	-
CO-2	2	2	2	-	2	2	-	-	2	-	-	2	-	2
CO-3	2	2	2	-	2	2	-	-	2	-	-	2	-	2
CO-4	3	2	2	3	3	3	-	2	3	-	-	2	-	3
CO-5	2	2	2	-	-	-	-	-	-	-	-	2	-	2
PO Target	2.2	2	2	3	2.3	2.3	0	2	2.3	0	0	2	0	2.25



**Department of Computer Science & Engineering** 

## **Course Outcome (Application of Soft Computing, KCS 056)**

<b>CO No.</b> After con	<b>Statement of Course Outcome</b> npletion of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
C01	Recognize the feasibility of applying various soft computing methodologies for engineering problems.	Apply	Conceptual & Procedural
CO2	Apply neural network for classification and clustering problems for real world and soft computing problems.	Apply	Conceptual & Procedural
CO3	Apply fuzzy logic and reasoning to handle uncertainty and solve engineering problems.	Apply	Conceptual & Procedural
CO4	Analyze fuzzy logic and fuzzy inference engines to handle uncertainty in solving engineering problems.	Analyze	Conceptual & Procedural
C05	Understand genetic algorithms for solving combinatorial optimization problems.	Understand	Conceptual

## **<u>CO-PO Mapping (Application of Soft Computing, KCS 056)</u>**

Course Code:		Programme Outcome (PO) PSO/ APO												PSO/ APO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	2	2	2	2	2	2	-	-	-	-	-	-	2	2
CO2	2	2	3	1	2	2	1	-	1	1	-	-	2	2
CO3	2	2	2	2	3	3	-	-	-	-	-	-	2	2
CO4	2	2	3	1	3	3	-	-	1	1	3	-	2	2
CO5	2	2	3	2	2	2	-	-	1	1	-	-	2	2
PO Target	2	2	2.6	1.6	2.4	2.4	1	-	1	1	3	-	2	2



#### Course Outcome (Constitution of India, Law & Engineering, KNC 501)

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After completo	etion of the course, the student will be able	Process Level (BL)	Category (KC)
C01	Identify and explore the basic features and modalities about Indian constitution.	Remember, Understand	K1, K2
CO2	Differentiate and relate the functioning of Indian parliamentary system at the center and state level.	Understand, Applying	K2, K3
C03	Differentiate and relate the functioning of Indian parliamentary system at the center and state level.	Understand, Applying	K2, K3
C04	Differentiate and relate the functioning of Indian parliamentary system at the center and state level.	Remember, Understand, Applying	K1, K2& K3
C05	Interpret and evaluate the role of engineers with different organizations and governance models	Understand, Evaluating	K2, K5

#### **<u>CO-PO Mapping (Constitution of India, Law & Engineering, KNC 501)</u></u>**

Course				]	Progra	mme (	Outcon	ne (PO	)				PSO	PSO
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	1	1	1	1	1	2	2	2	1	1	1	1	1	1
CO-2	1	1	1	1	2	2	2	1	2	1	1	2	2	1
CO-3	1	1	1	2	1	1	2	1	2	1	1	2	1	1
CO-4	1	1	1	3	2	2	2	2	1	1	1	2	2	1
CO-5	1	1	1	3	2	2	2	2	2	1	1	2	2	1
PO Target	1	1.17	1.33	2.33	2.17	2.5	2.83	2.67	2.83	2.5	2.67	3.5	1.5	1.17



#### **Course Outcome (Database Management System Lab, KCS551)**

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level	Knowledge		
After completo	tion of the course, the student will be able	(BL)			
C01	Design an information model expressed in the form of ER diagram.	Create	Procedural & Metacognitive		
CO2	Apply SQL queries to implement and manipulate the database and provide different constraints.	Apply	Procedural		
CO3	Apply structured query language to automate the real time problems of databases.	Apply	Procedural		

#### **<u>CO-PO Mapping (Database Management System Lab, KCS551)</u></u>**

Course		Programme Outcome (PO)												
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	2	1	3	2	3	-	1	1	1	3	2	1	-	3
CO-2	2	1	3	2	3	-	-	-	-	2	2	1	-	3
CO-3	3	2	2	-	3	-	-	1	-	-	-	-	-	-
PO Target	2.67	1.33	2.67	2	3	-	1	1	1	2.5	2	1	-	3



## **Course Outcome (Compiler Design Lab, KCS-552)**

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
A	fter completion of the course, the student will be able to		(NC)
CO1	Identify patterns, tokens & regular expressions for lexical analysis.	Analyze	Conceptual, Procedural
CO2	Design Lexical analyser for given language using C and LEX /YACC tools	Apply	Conceptual, Procedural, Metacognitive
CO3	Design top down and bottom-up parsers.	Create	Conceptual, Procedural
CO4	Generate the intermediate code for syntax directed translation.	Apply	Conceptual, Procedural
CO5	Generate machine code from the intermediate code forms	Apply	Conceptual, Procedural

## **<u>CO-PO Mapping (Compiler Design Lab, KCS-552)</u></u>**

Course Code:		Programme Outcome (PO)												PSO/ APO
KCS-552	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	3	-	-	-	2	-	-	-	-	-	-	2	2	-
CO2	2	-	3	2	3	-	-	-	-	3	2	-	-	3
CO3	3	-	-	-	3	-	-	-	-	-	-	-	-	-
CO4	2	3	-	3	-	-	-	-	-	-	-	-	-	2
CO5	2	3	-	3	-	-	-	-	-	-	-	-	-	2
PO Target	2.4	3	3	2.6	2.6	0	0	0	0	3	2	2	2	2.3



#### **Course Outcome (Design and Analysis of Algorithm Lab, KCS-553)**

CO No.	Course Outcome (CO)	Revised Bloom's Cognitive Process Level (BL)	Knowledge Category* (KC)
C01	Analyze algorithm to solve problems by iterative approach.	Analyze	С, Р
CO2	Analyze algorithm to solve problems by divide and conquer approach	Analyze	С, Р
CO3	Create algorithm to solve problems by Greedy algorithm approach.	Create	Р, М
CO4	Apply algorithm to solve problems by Dynamic programming, backtracking.	Apply	Р, М
CO5	Apply algorithm to solve problems by branch and bound approach.	Apply	С, Р

\*Knowledge Categories (KCs): F-Factual, C-Conceptual, P-Procedural, M-Metacognitive

<b>CO-PO Mapping</b>	(Design and Analy	vsis of Algorithm Lab.	KCS-553)
	<del>~ 0</del> ,		

Course Code: KCS553	Course Code: Programme Outcome (PO) KCS553											PSO/ APO	PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	-	3	-	2	-	-	-	-	-	-	-	3	-	-
CO2	-	3	-	3	2	-	-	-	-	-	-	2	-	-
CO3	3	-	3	-	2	-	-	-	-	-	2	2	2	2
CO4	2	-	-	-	-	-	-	-	-	-	2	2	-	-
CO5	-	-	-	-	2	-	-	-	-	-	-	2	-	-
PO Target	2.5	3	3	2.5	2	-	-	-	-	-	2	2.2	2	2



CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge								
After comple	tion of the course, the student will be able to	(BL)	Category (KC)								
C01	Identify a problem and gather its requirements	Applying	Conceptual & Procedural								
CO2	Design a solution of the problem using latest tools & techniques.	Creating	Conceptual, Procedural & Metacognitive								
CO3	Develop a project using latest technology	Creating	Conceptual, Procedural & Metacognitive								
CO4	Develop professional skills and critical thinking to prepare for major project	Creating	Conceptual, Procedural & Metacognitive								
CO5	Demonstrate an ability to present project works to the evaluators.	Applying	Conceptual & Procedural								

## <u>Course Outcome (Mini Project Lab (KCS-554)</u>

## **<u>CO-PO Mapping (Mini Project Lab (KCS-554)</u>**

Course	e Programme Outcome (PO)											PSO	PSO	
Code:	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	2.80	3.00	3.00	3.00	3.00	1.67	0	2.00	2.40	2.33	2.00	2.80	2.20	2.20



#### Course Outcome (Project management & Entrepreneurship, KHU 702)

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After comple	tion of the course, the student will be able to	(BL)	Category (KC)
C01	Understand the theories of entrepreneurship and Entrepreneurial Development Programmes.	2	Factual
CO2	Create innovative business ideas and market Opportunities	6	Conceptual, Procedural
CO3	Understand the importance of Project Management and Project's life cycle	2	Factual, Conceptual
C04	Analyse Project Finance and project report.	4	Conceptual, Procedural
C05	Analyse Social Sector Perspectives and Social Entrepreneurship.	4	Conceptual, Procedural

#### **<u>CO-PO Mapping (Project management & Entrepreneurship, KHU 702)</u></u>**

Course				]	Progra	mme C	)utcon	ne (PO	)				PSO	PSO
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	-	-	-	-	-	1	1	2	2	-	3	1	-	-
CO-2	-	-	-	-	-	2	2	3	3	-	3	2	-	-
CO-3	-	-	-	-	-	3	3	2	3	-	3	2	-	-
CO-4	-	-	-	-	-	2	3	2	3	-	3	2	-	-
CO-5	-	-	-	-	-	2	3	3	2	-	3	3	-	-
PO Target	-	-	-	-	-	2	2	2	3	-	3	2	-	-



### Course Outcome (Cryptography & Network Security, KCS 074)

CO No.	Statement of Course Outcome	Bloom's	Knowledge
After cor	npletion of the course, the student will be able to	Level (BL)	Category (KC)
C01	Classify the symmetric encryption techniques and illustrate various private key cryptographic techniques.	Understand	Conceptual, Procedural
CO2	Make use of modular arithmetic's and public key cryptosystem to protect the data over network.	Apply	Conceptual, Procedural
CO3	Evaluate the authentication and hash algorithms.	Analyze	Conceptual, Procedural
CO4	Identify different protocols for effective key management, distribution and authentication in public key infrastructure.	Apply	Conceptual, Procedural
CO5	Illustrate IP Security to secure data across IP networks and summarize intrusion detection system along with the various solutions to overcome the attacks.	Understand	Conceptual, Procedural

### **<u>CO-PO Mapping (Cryptography & Network Security, KCS-074)</u></u>**

Course	Programme Outcome (PO)												PSO	PSO
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	3	2	1	1	1	-	2	1	1	1	1	2	2
CO-2	3	3	2	1	1	1	-	2	-	1	1	1	2	2
CO-3	2	3	2	1	1	1	-	1	-	1	-	1	2	2
CO-4	2	2	2	1	1	2	-	1	-	1	-	1	2	2
CO-5	2	3	2	1	1	1	-	1	-	1	-	1	2	2
PO Target	2.4	2.8	2	1	1	1.2	-	1.4	0.2	1	0.4	1	2	2



## **<u>Course Outcome (Cloud Computing, KCS 713)</u>**

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After comple	tion of the course, the student will be able to	Process Level (BL)	Category (KC)
CO1	Describe architecture and underlying principles of cloud computing.	Understand	Conceptual & Procedural
CO2	Explain and apply need, types and tools of Virtualization for cloud.	Apply	Conceptual, Procedural
CO3	Create the Services Oriented Architecture and various types of cloud services.	Create	Conceptual, Procedural & Metacognitive
CO4	Analyze Inter cloud resources management cloud storage services and their providers Assess security services and standards for cloud computing.	Analyze	Conceptual & Procedural
CO5	Analyze advanced cloud technologies.	Analyze	Conceptual & Procedural

## **<u>CO-PO Mapping (Cloud Computing, KCS 713)</u>**

Course	Programme Outcome (PO)											PSO	PSO	
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	2	-	-	2	-	-	1	1	-	1	2	-	-
CO-2	2	2	3	2	2	-		1	1	3	2	1	2	3
CO-3	3	2	-	-	-	-	-	1	-	1	-	1	-	-
CO-4	3	3	-	2	-	-	-	-	-	-	-	1	-	2
CO-5	2	3	-	3	-	-	-	-	1	-	-	1	-	2
PO Target	2.6	2.4	3	2.33	2	0	0	1	1	2	1	1.20	2	2.33



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	<b>Course Outcome</b>	(Machine Learning	KOE-073)
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CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After comple	tion of the course, the student will be able to	Process Level (BL)	Category (KC)
C01	Gain knowledge about basic concepts of Learning system, Learning Problems, Learning Task and mathematics behind machine learning.	Understand	2, 3
C02	Understand the machine learning models and basic concepts of artificial neural network.	Understand	2, 3
CO3	Solve the classification problem using Bayesian Learning Model.	Analyze	2, 4
CO4	Apply the hypothesis concepts on various Learning Models.	Apply	4, 5
C05	Understand the concepts of Genetic algorithm and Reinforcement Learning.	Understand	3, 4

## **<u>CO-PO Mapping (Machine Learning, KOE-073)</u>**

Course	e Programme Outcome (PO)											PSO	PSO	
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	2	1	3	3	2	2	2	1	1	2	3	2	3
CO-2	3	3	2	2	2	2	1	1	1	1	2	3	3	3
CO-3	3	3	3	3	3	2	2	2	1	1	2	3	3	3
CO-4	3	3	3	3	3	2	2	2	1	1	2	3	3	3
CO-5	3	3	3	3	3	2	2	2	1	1	2	3	3	3
PO Target	3	2.8	2.4	2.8	2.8	2	1.8	1.8	1	1	2	3	2.8	3



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## **Course Outcome (Cloud Computing Lab, KCS 751)**

CO No.	Statement of Course Outcome	Plaam's Cognitivo	Knowlodgo
After con	pletion of the course, the student will	Process Level (RI)	Category (KC)
be able to	)	I I OCESS LEVEL (DL)	category (IC)
C01	Explain the various paradigm of cloud computing and computing techniques.	Understand (BL-2)	Factual, Conceptual
CO2	Articulate the concepts, key technologies, strength and limitation of cloud computing and possible application	Apply (BL-3)	Conceptual, Procedural
CO3	Identify the architecture and infrastructure of cloud computing including SaaS, PaaS,Iaas, public cloud, private cloud and hybrid cloud.	Analyze (BL-4)	Conceptual, Procedural
CO4	Interpret various data, scalability and cloud services to acquire efficient database	Analyze (BL-4)	Factual, Conceptual, Procedural
CO5	Analyze the concept of Cloud computing Web Applications	Analyze (BL-4)	Factual, Conceptual, Procedural

## **<u>CO-PO Mapping (Cloud Computing Lab, KCS 751)</u>**

Course Code: KCS 751	Programme Outcome (PO)												PSO	PSO
7.01	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	3	2	-	-	-	-	-	-	-	-	2	2	2
CO-2	3	3	2	-	-	-	-	-	-	-	-	2	-	-
CO-3	3	3	2	2	2	-	-	-	-	-	-	2	-	-
CO-4	3	3	2	2	2	-	-	-	-	-	-	2	-	-
CO-5	3	3	2	2	2	-	-	-	-	-	-	2	-	-
PO Target	3	3	2	2	2	-	-	-	-	-	-	2	2	2



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#### Course Outcome (Mini Project, KCS752)

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After comple	tion of the course, the student will be able to	(BL)	Lategory (KC)
C01	Identify a problem and gather its requirements.	Apply	Conceptual
CO2	Design a solution of the problem using latest tools & techniques.	Create	Metacognitive
CO3	Develop a project using latest technology.	Create	Metacognitive
C04	Develop professional skills and critical thinking to prepare for major project.	Create	Metacognitive
C05	Demonstrate an ability to present project works to the evaluators.	Apply	Conceptual

## **<u>CO-PO Mapping (Mini Project, KCS752)</u>**

Course					Prog	amme	Outco	me (P	0)				PSO	PSO
Code:	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	2.2	3	3	3	3	1.66	-	2	2.4	2.33	2	2.8	2.2	2.2



#### Course Outcome (Project, KCS753)

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Lovel	Knowledge
After comple	tion of the course, the student will be able to	(BL)	Category (KC)
C01	Identify socio technical problems and their feasibility.	Apply	Conceptual
CO2	Apply a suitable software development model for the real-world problem.	Apply	Conceptual
CO3	Design engineering solutions to complex problems by utilizing a systematic approach.	Create	Metacognitive
C04	Solve the real-life problems by using the various tools, techniques, and coding practices.	Evaluate	Metacognitive
CO5	Take part in written and verbal communication with professional and community at large.	Analyze	Procedural
C06	Analyze the stakeholder expectations to ensure successful project outcomes.	Analyze	Procedural

## **<u>CO-PO Mapping (Project, KCS753)</u>**

Course					Prog	gramme	Outco	ome (PO	)				PSO	PSO
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	3	-	-	3	3	-	-	2	1	3	3	2	2
CO-2	3	3	3	3	3	-	-	-	2	-	2	3	-	3
CO-3	3	3	3	3	3	-	-	-	3	-	2	3	2	3
CO-4	3	3	3	3	3	2	2	2	2	-	2	3	1	3
CO-5	-	-	-	-	-	2	2	3	2	3	-	3	-	-
CO-6	2	-	-	-	3	2	-	3	2	3	-	3	2	2
PO Target	2.8	3	3	3	3	2.25	2	2.66	2.16	2.33	2.25	3	1.75	2.6



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#### **Course Outcome (Mathematics IV, KAS-402)**

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level	Knowledge Category
After completi	ion of the course, the student will be able to	(BL)	(KC)
C01	Understand the linear and non linear Partial Differential Equations using Lagrange's and Charpit methods.	Solve	Conceptual & Procedural
C02	Apply the concept of separation of variables to solve wave, heat, Laplace and transmission equations.	Apply	Conceptual & Procedural
CO3	Determine Moments, M.G.F, Correlations, linear regression. Apply the concept of probability to solve discrete and continuous probability distributions.	Evaluate	Conceptual & Procedural
CO4	Apply the concept of probability to solve discrete and continuous probability distributions.	Apply	Conceptual & Procedural
C05	Apply the concept of sampling to study t-test, F- test and Chi- square test, One way Analysis of Variance (ANOVA).	Apply	Conceptual & Procedural

## **<u>CO-PO Mapping (Mathematics IV, KAS-402)</u>**

Course Code	Programme Outcome (PO)												PSO	PSO
course code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	2	2	-	-	-	-	-	-	-	-	-	2	1	1
CO-2	2	2	2	-	-	-	-	-	-	-	-	2	1	1
CO-3	2	2	2	2	2	-	-	-	-	-	-	2	2	1
CO-4	2	2	1	1	1	-	-	-	-	-	-	1	1	1
CO-5	2	1	2	2	2	2	2	-	-	-	-	2	2	1
PO Target	2	1.8	1.75	1.6	1.6	2	2					1.8	1	1



### **Course Outcome (Technical Communication, KAS-401)**

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level	Knowledge Category
After com	pletion of the course, the student will be able to	(BL)	(RC)
C01	Analyze the nature and objectives of Technical Communication relevant for workplace as Engineer.	Analyze	Factual & Conceptual
C02	Utilizing the Technical writing skills for the purpose of Technical Communication and its exposure in various dimensions.	Apply	Conceptual & Procedural
CO3	Imbibe presentation strategies inputs with confidence in facing diverse audience in required situations at workplace.	Apply	Conceptual, Procedural & Metacognitive
CO4	Estimate the application of Technical Communication to promote their competence for various media like report generation, resume deign, GD and Interview etc.	Evaluate	Metacognitive
C05	Evaluate Voice dynamics and select appropriate cues for their own efficacy as fluent and efficient communicators.	Evaluate	Conceptual & Procedural

### **<u>CO-PO Mapping (Technical Communication, KAS-401)</u></u>**

Course	Programme Outcome (PO)										PSO	PSO		
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	-	-	-	-	-	-	-	-	2	3	-	3	-	-
CO-2	-	-	-	-	-	-	-	-	2	3	-	3	-	-
CO-3	-	-	-	-	-	-	-	-	2	3	-	3	-	-
CO-4	-	-	-	-	-	-	-	-	2	3	-	3	-	-
CO-5	-	-	-	-	-	-	-	-	2	3	-	3	-	-
PO Target	-	-	-	-	-	-	-	-	2	3	-	3	-	-



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### **Course Outcome (Operating Systems, KCS-401)**

CO No.	Statement of Course Outcome	Revised Bloom's Cognitive Process Level (BL)	Knowledge Category* (KC)
CO1	Understand the structures of the operating system, different types of operating system and functions performed by modern operating system.	Understand	С
CO2	Analyse various software and hardware synchronization tools for solving critical section problems in concurrent processes.	Analyze	С, Р
CO3	Apply various CPU scheduling algorithms on different system problems.	Apply	Р
CO4	Apply process management and memory management concepts to solve various hardware and software problems.	Apply	С, Р
CO5	Understand various file management and security mechanisms techniques used in operating systems.	Understand	С

#### **<u>CO-PO Mapping (Operating Systems, KCS-401)</u>**

<b>C</b>	Programme Outcome (PO)													
Code	4	2	n	4	F	6	7	0	0	1	1	1	1	n
Coue:	T	2	З	4	Э	0	/	ο	9	0	1	2	T	Z
C01	-	-	-	-	-	-	-	-	-	2	-	-	1	-
CO2	3	2	2	2	2	-	-	-	-	2	1	-	1	-
CO3	3	2	2		2	-	-	-	-	2	1	-	1	-
CO4	3	2	2	1	2	-	-	-	-	2	1	-	1	-
CO5	-	1	-	-	-	1	-	-	-	2	1	-	1	-
PO Target	3	1.75	2	1.5	2	1	-	-	-	2	1	-	1	-


#### Course Outcome (Theory of Automata and Formal Languages, KCS-402)

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After com	pletion of the course, the student will be able to	Level (BL)	(KC)
C01	Understand basic properties of formal languages and formation of different Finite Automaton	Understand	Conceptual & Procedural
CO2	Analyze regular language and application of finite automaton.	Analyze	Conceptual, Procedural
CO3	Analyze the context free grammar and Languages.	Analyze	Conceptual & Procedural
C04	Design Push down automaton and its formation for different languages.	Create	Conceptual & Procedural
CO5	Design Turing Machine and basics of recursive functions.	Create	Conceptual & Procedural

### **<u>CO-PO Mapping (Theory of Automata and Formal Languages, KCS-402)</u></u>**

Course Code:		Programme Outcome (PO)													
course coue.	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
C01	3	1	2	2	1	-	-	-	-	-	-	1	1	1	
CO2	3	2	2	1	2	-	-	-	-	-	-	2	-	2	
CO3	3	3	3	2	3	-	-	-	-	-	-	2	1	1	
CO4	2	3	3	2	1	-	-	-	-	-	-	2	2	3	
CO5	3	3	3	2	3	-	-	-	-	-	-	2	1	3	
PO Target	2.8	2.4	2.6	1.8	2	-	-	-	-	-	-	1.8	1	2	



#### **Course Outcome (Microprocessor, KCS-403)**

<b>CO No.</b> After com	Statement of Course Outcome pletion of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
C01	Recall basic concept of digital computer to Microprocessor based systems	Apply	Conceptual & Procedural
CO2	Identify detailed s/w & h/w structure of 8085/8086 Microprocessor	Understand	Conceptual & Procedural
CO3	Examine hardware and software problems after studying instruction set of 8085/8086 programming techniques.	Apply	Conceptual & Procedural
C04	Analyses software problems after studying instruction set of 8085 and programming techniques.	Analyse	Conceptual & Procedural
C05	Illustrate 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.	Analyse	Conceptual & Procedural

#### **<u>CO-PO Mapping (Microprocessor, KCS-403)</u>**

Course Code: Programme Outcome (PO)											PSO1	PSO2		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	2	1	1	-	2	-	1	1	1	1	1	2	1	1
CO2	2	1	2	1	2	-	1	1	1	1	1	1	1	1
CO3	3	1	1	-	3	-	-	1	1	2	1	1	-	1
CO4	2	2	1	1	1	-	-	1	-	1	1	1	-	2
C05	2	3	1	1	1	-	-	1	-	1	1	1	-	2
PO Target	2.2	1.6	1.2	1	1.8	-	1	1	1	1.2	1	1.2	1	1.4



### **Course Outcome (Python Programming, KNC-402)**

CO. No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category
After completio able to	n of the course, the student will be	Level (BL)	(KC)
C01	Understand the basic syntax of Python programming.	Understand	Conceptual
C02	Understand and apply looping and conditional constructs in Python.	Apply	Conceptual, Procedural
C03	Understand how to implement list tuples, dictionary and set data structures.	Understand	Conceptual, Procedural
CO4	Understand how to do input/output with files in Python.	Apply	Conceptual, Procedural
C05	Understand and apply searching sorting, and merging algorithms in Python	Apply	Conceptual, Procedural

### **<u>CO-PO Mapping (Python Programming, KNC-402)</u>**

		Programme Outcome (PO)												
Course Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	2	2	1	1	2	-	-	-	-	-	-	1	1	1
CO2	3	2	2	2	3	-	-	-	-	-	-	2	2	2
CO3	3	3	2	2	3	-	-	-	-	-	-	2	2	2
CO4	3	2	2	2	3	-	-	-	-	-	-	2	2	2
C05	3	2	2	3	3	-	-	-	-	-	-	2	2	2
PO Target	2.8	2.2	1.8	2	2.8	-	-	-	-	-	-	1.8	1.8	1.8



### **Course Outcome (Operating Systems Lab. KCS-451)**

<b>CO No.</b> After comple	<b>Statement of Course Outcome</b> etion of the course, the student will be able to	Bloom's Cognitive ProcessLevel (BL)	Knowledge Category (KC)
C01	Compare and contrast among various CPU scheduling algorithms and apply knowledge toidentify the best scheduling algorithm as per software requirement.	Analyze	Р
CO2	Apply the concept of process synchronizationtool like semaphore to solve mutual exclusionproblem in order to coordinate concurrent processes.	Apply	С, Р
CO3	Apply the concepts of deadlock in operatingsystems to design and implement various deadlock avoidance algorithms like Banker's algorithm used in banking system.	Apply	С, Р

### **<u>CO-PO Mapping (Operating Systems Lab. KCS-451)</u></u>**

Course					Pro	ogramı (	ne Ou PO)	tcome					PSO	PSO
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	2	2	2	2	-	-	-	2	1	1	1	2	2
CO-2	2	2	3	3	2	-	-	-	1	1	2	1	2	2
CO-3	3	3	2	3	2	-	-	-	1	1	1	1	2	2
PO Target	2.6	2.3	2.3	2.6	2	-	-	-	1.3	1	1.3	1	2	2



# **KIET Group of Institutions, Ghaziabad**

**Department of Computer Science & Engineering** 

### Course Outcome (Microprocessor Lab, KCS-452)

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category
After com	pletion of the course, the student will be able to	Level (BL)	(KC)
C01	Compute arithmetic operations using 8085 assembly language.	Apply	Conceptual & Procedural
CO2	Compute searching, and sorting using 8085 assembly language.	Apply	Conceptual & Procedural
CO3	Compute complement, and ASCII conversion of numbers using 8085 assembly language.	Apply	Conceptual & Procedural

#### **<u>CO-PO Mapping (Microprocessor Lab, KCS-452)</u>**

Course Code:		Programme Outcome (PO)												
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	2	2	1	-	2	-	-	1	1	1	1	2	1	1
CO2	2	2	1	-	1	-	-	1	1	2	1	2	1	1
CO3	2	2	1	-	1	-	-	1	1	1	1	1	1	1
PO Target	2	2	1	-	1.3	-	-	1	1	1.3	1	1.6	1	1



#### **Course Outcome (Python Language Programming Lab, KCS-453)**

CO. No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After comple	etion of the course, the student will be able to	Process Level (BL)	(KC)
C01	Understand basic syntax of Python implementation	Understand	Conceptual
CO2	Apply looping and conditional constructs	Apply	Conceptual, Procedural
CO3	Develop programs related with list data structure	Apply	Conceptual, Procedural
CO4	Design programs related to tuples, dictionary and set	Apply	Conceptual, Procedural
CO5	Illustrate searching, sorting and merging in python	Apply	Conceptual, Procedural

#### **<u>CO-PO Mapping (Python Language Programming Lab, KCS-453)</u></u>**

		Programme Outcome (PO)												
Course Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	3	1	2	1	3	-	-	-	-	-	-	1	1	1
CO2	3	2	2	2	3	-	-	-	-	-	-	2	2	2
CO3	3	3	2	2	3	-	-	-	-	-	-	2	2	2
C04	3	2	2	2	3	-	-	-	-	-	-	2	2	2
C05	3	2	2	3	3	-	-	-	-	-	-	2	2	2
PO Target	3	2	2	2	3	-	-	-	-	-	-	1.8	1.8	1.8



### **Course Outcome (Software Engineering, KCS-601)**

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category
After con	pletion of the course, the student will be able to	Level (BL)	(KC)
C01	Apply the concepts of software engineering to solve problems using generic models of software development process.	Apply	Conceptual & Procedural
CO2	Analyse feasibility and requirements for solving problem and express it in terms of software requirement specification document.	Analyse	Conceptual, Procedural
CO3	Design and evaluate software-based system components of varying complexity that meet desired needs using design and development principles.	Create	Conceptual & Procedural
CO4	Perform testing of the developed software and evaluate it using automated software testing strategies.	Evaluate	Conceptual & Procedural
CO5	Identify the need of Engaging in life-long maintenance and continuing Software development.	Analyse	Conceptual, Procedural & Metacognitive

#### **<u>CO-PO Mapping (Software Engineering, KCS-601)</u></u>**

Course Code:	Course Code: Program Outcome (PO)										PSO1	PSO2		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	3	3	1	3	3	1	3	-	2	-	3	3	1	3
CO2	3	3	3	2	2	3	3	1	2	3	3	3	-	3
CO3	3	2	3	3	3	-	-	1	2	3	3	2	-	3
CO4	3	-	-	1	3	-	-	-	2	-	3	2	-	3
CO5	3	3	-	1	3	1	-	-	2	-	2	3	2	3
PO Target	3	2.2	2.3	2	2.8	1.6	3	1	2	3	2.8	2.6	1.5	3



# **KIET Group of Institutions, Ghaziabad**

**Department of Computer Science & Engineering** 

### Course Outcome (Web Technology, KCS 602)

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After comp	letion of the course, the student will be able to	Process Level (BL)	(KC)
C01	Demonstrate Java programs for window-based applications.	Apply	Conceptual & Procedural
CO2	Illustrate static, interactive web pages using HTML, CSS and XML.	Analyze	Conceptual & Procedural
CO3	Apply JavaScript, AJAX and socket programming for client-server applications.	Analyze	Conceptual & Procedural
CO4	Develop enterprise level applications and manipulate database using JDBC.	Create	Conceptual & Procedural
C05	Design interactive web applications using Servlets and JSP.	Create	Conceptual, Procedural & Metacognitive

#### **<u>CO-PO Mapping (Web Technology, KCS 602)</u>**

Course		Program Outcome (PO)													
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
C01	2	2	3	3	3	-	-	-	-	-	2	2	3	2	
CO2	2	-	2	2	3	-	-	-	2	-	-	2	3	2	
CO3	2	2	3	3	3	-	-	-	-	-	2	2	3	2	
CO4	3	3	3	3	3	3	-	-	-	-	-	3	3	2	
CO5	3	2	3	2	3	-	-	-	-	-	2	2	3	2	
PO Target	2.4	2.2	2.8	2.6	3.0	3.0	0	0	2.0	0	2.0	2.2	3.0	2.0	



## **<u>Course Outcome (Computer Networks, KCS-603)</u>**

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	Contrast the knowledge of networking concepts and functionality of physical layer.	Analyze	Conceptual & Procedural
CO2	Apply the concept of elementary data link layer protocol to design a robust network.	Apply	Conceptual, Procedural, & Metacognitive
CO3	Explore the functions of network layer and illustrate the performance of routing algorithms.	Analyze	Factual, Conceptual, & Procedural
CO	Examine the usage and working of transport layer.	Apply	Conceptual & Procedural
CO5	Analyze the performance of different protocols used at the application layer.	Analyze	Conceptual & Procedural

### **<u>CO-PO Mapping (Computer Networks, KCS-603)</u>**

Course Code:	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012	PSO1	PSO2
C01	3	2	2	1	2	-	-	-	-	-	1	-	-	-
CO2	3	3	2	1	1	-	-	-	-	-	2	-	-	-
CO3	3	2	3	1	2	-	-	-	-	-	1	-	-	-
CO4	3	3	3	1	2	1	-	-	-	-	3	-	-	-
CO5	3	2	3	1	2	2	-	-	-	-	2	-	-	-
PO Target	3	2.4	2.6	1	1.8	1.5	-	-	-	-	1.8	-	-	-



# **KIET** Group of Institutions, Ghaziabad

**Department of Computer Science & Engineering** 

### Course Outcome (Big Data, KCS-061)

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge			
After con	npletion of the course, the student will be able to	course, the student will be able to (BL)				
C01	Demonstrate knowledge of Big Data Analytics concepts and its applications in business.	Understand	Factual			
CO2	Demonstrate functions and components of Map Reduce Framework and HDFS.	Apply	Conceptual, Procedural			
CO3	Discuss Data Management concepts in NoSQL environment.	Analyse	Conceptual & Procedural			
CO4	Explain process of developing Map Reduce based distributed processing applications.	Analyse	Conceptual & Procedural			
CO5	Explain process of developing applications using HBASE, Hive, Pig etc.	Apply	Factual & Conceptual			

### **<u>CO-PO Mapping (Big Data, KCS-061)</u>**

Course Code:	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012	PSO1	PSO2
C01	1	1	1	2	3	-	-	-	-	1	-	1	3	1
CO2	2	3	3	3	3	-	-	-	-	1	-	2	3	2
CO3	1	3	3	3	3	-	-	-	-	1	1	2	3	2
CO4	1	1	3	3	3	-	-	-	-	1	2	2	3	2
CO5	1	1	2	3	3	-	-	-	-	1	2	2	3	2
PO Target	1.2	1.8	2.4	2.8	3	-	-	-	-	1	1.66	1.8	3	1.8



### **Course Outcome (Software Project Management, KOE-068)**

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category	
After com	pletion of the course, the student will be able to	Level (BL)	(KC)	
C01	Exercise the project planning activities and the key phases of project management.	Apply	Procedural	
CO2	Apply different software process models and cost estimation models for development of a project.	Apply	Conceptual	
CO3	Explore various project activities to compute critical path for risk analysis.	Analyze	Procedural	
CO4	Identify the different project contexts and suggest an appropriate management strategy.	Analyze	Procedural	
CO5	Adapt professional ethics in staff selection and professional concern in team building for successful software development.	Apply	Conceptual	

#### **<u>CO-PO Mapping (Software Project Management, KOE-068)</u></u>**

Course Code:		Programme Outcome (PO)													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
C01	3	3	2	1	-	2	-	-	2	3	2	2	2	2	
CO2	2	3	-	-	2	2	-	-	2	-	3	2	2	2	
CO3	3	3	3	3	3	2	-	-	2	2	2	3	2	2	
CO4	2	2	-	2	2	2	-	-	2	2	2	2	2	2	
CO5	1	-	-	-	-	3	2	3	3	3	2	2	2	2	
PO Target	2.20	2.75	2.50	2.00	2.33	2.20	2.00	3.00	2.20	2.50	2.20	2.20	2.00	2.00	



### Course Outcome (Indian Tradition, Culture & Society, KNC-602)

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
Upon the	e completion of the course, the student will be able to:	Process Level (BL)	Category (KC)
C01	Identify and understand the roots and details of Society State and Polity in India.	Understand	Factual and Conceptual
CO2	Understand the importance of Indian Literature, Culture, Tradition, Practices and to apply in present system.	Apply	Factual, Meta cognitive
CO3	Analyze the Indian Religion, Philosophy, Practices and in shadow of Pre-Vedic and Vedic Religion, Buddhism, Jainism, Six System Indian Philosophy and to apply in present system.	Analyze	Conceptual and Meta cognitive
CO4	Analyze the Science, Management and Indian Knowledge System and to apply in present system.	Analyze	Factual, Procedural and Meta cognitive
C05	Evaluate the Indian Architect, Engineering and Architecture in Ancient India, Indian's Cultural Contribution to the World and to create environment in Arts and Cultural for the present system.	Evaluate	Factual, Procedural and Meta cognitive

### **<u>CO-PO Mapping (Indian Tradition, Culture & Society, KNC-602)</u></u>**

Course Code:	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012	PSO1	PSO2
C01	-	2	2	1	2	2	2	2	2	1	-	2	2	-
CO2	2	1	2	-	2	2	2	2	2	1	2	3	1	1
CO3	1	1	2	-	-	2	2	2	1	2	-	2	-	1
CO4	2	2	2	-	-	2	2	2	2	2	2	2	1	2
CO5	2	1	2	2	2	3	2	2	2	2	1	2	1	2
CO	1.2	1.4	2	0.6	1.2	2.2	2	2	1.8	1.6	1	2.2	1	1.2



### **Course Outcome (Software Engineering, KCS-651)**

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category
After com	pletion of the course, the student will be able to	Level (BL)	(KC)
C01	Identify ambiguities, inconsistencies and incompleteness from a requirements specification and state functional and non-functional requirement	Apply	Conceptual & Procedural
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	Analyze	Conceptual & Procedural
CO3	Draw a class diagram after identifying classes and association among them	Create	Conceptual & Procedural
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	Evaluate	Conceptual & Procedural
CO5	Able to use modern engineering tools for specification, design, implementation and testing	Analyze	Conceptual, Procedural & Metacognitive

#### **<u>CO-PO Mapping (Software Engineering, KCS-651)</u></u>**

				PSO1	PSO2									
Course Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	1	3	3	1	3	-	2	-	3	3	1	3
CO2	3	3	3	2	2	3	3	1	2	3	3	3	-	3
CO3	3	2	3	3	3	-	-	1	2	3	3	2	-	3
CO4	3	-	-	1	3	-	-	-	2	-	3	2	-	3
CO5	3	3	-	1	3	1	-	-	2	-	2	3	2	3
PO Target	3	2.2	2.3	2	2.8	1.6	3	1	2	3	2.8	2.6	1.5	3



## Course Outcome (Web Technology Lab, KCS-652)

<b>CO No</b> .	Statement of Course Outcome (CO)	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)					
Anter comp								
C01	Apply HTML, CSS for static web pages	CSS for static web pages Apply						
CO2	Apply Java programs for window-based applications	Apply	Conceptual & Procedural					
CO3	Design dynamic web pages using JavaScript and XML	Create	Conceptual & Procedural					
<b>CO4</b>	Develop dynamic web page using SERVLET and JSP	Create	Conceptual & Procedural					
C05	Design server site applications using JDDC and session tracking API	Create	Conceptual, Procedural & Metacognitive					

### **<u>CO-PO Mapping (Web Technology Lab, KCS-652)</u>**

Course					Progra	m Oı	itcoi	ne (	PO)				PSO	PSO
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	3	2	2	3	2	-	1	-	1	-	2	2	3	2
CO2	3	2	3	3	2	-	-	1	2	1	2	3	3	2
CO3	3	2	3	3	2	1	1	-	1	2	-	3	3	2
CO4	3	-	-	2	3	-	-	1	-	1	-	3	3	2
C05	3	2	2	-	3	-	1	1	-	2	2	3	3	2
PO Target	3	2	2.5	2.75	2.4	1	1	1	1.3	1.5	2	2.8	3	2



#### Course Outcome (Computer Networks Lab. KCS-653)

CO No.	Course Outcome (CO)	Bloom's Cognitive ProcessLevel (BL)	Knowledge Category* (KC)
C01	Examine the networking commands and configuring network hardware.	Apply	Conceptual & Procedural
CO2	Demonstrate the working of cisco packet tracer.	Apply	Conceptual & Procedural
CO3	Apply the concepts of stop and wait ARQ.	Apply	Conceptual & Procedural
<b>CO4</b>	Construct the sockets for various applications.	Create	Conceptual & Procedural
CO5	Analyze the working and performance ofvarious protocols.	Analyze	Conceptual & Procedural

#### **<u>CO-PO Mapping (Computer Networks Lab, KCS-653)</u>**

Course Code:				P	rograi	nme C	Jutcon	ıe (PO	)				PSO/ APO	PSO/ APO
KCS553	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	2	3	3	3	-	-	-	-	-	2	2	3	2
CO2	2		2	2	3	-	-	-	-	-	-	2	3	2
CO3	2	2	3	3	3	-	-	-	-	-	2	2	3	2
CO4	3	3	3	3	3	-	-	-	-	-	-	3	3	2
CO5	3	2	3	2	3	-	-	-	-	-	2	2	3	2
PO Target	2.4	2.5	2.8	2.6	3.0	0.0	0.0	0.0	0.0	0.0	2.0	2.2	3.0	2.0



#### **Course Outcome (Rural Development Administration and Planning, KHU-801)**

CO. No.	Statement of Course Outcome	Bloom's	
After con	npletion of the course, the student will be able to	Cognitive Process Level (BL)	Knowledge Category (KC)
C01	Understand the basic concept of Rural Development.	Understand	Conceptual
CO2	Know the various experiments carried out prior to independence for Rural Development.	Understand	Conceptual
CO3	Understand the structure of rural administration through Panchayat Raj.	Understand	Conceptual
<b>CO4</b>	Infer the need for Human Resource for Rural Development.	Understand	Conceptual
C05	Understand the need for Rural Industrialization and Entrepreneurship.	Understand	Conceptual

### CO-PO Mapping (Rural Development Administration and Planning, KHU-801)

Course	P0-	PSO-	PSO-											
Code	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	-	-	-	-	2	2	2	-	-	1	2	-	I
CO2	-	-	-	-	-	1	1	1	-	-	-	1	-	-
CO3	-	-	-	-	-	1	1	1	-	-	-	1	-	-
CO4	-	-	-	-	-	2	3	2	2	-	1	2	-	-
CO5	-	-	-	-	-	2	3	2	2	-	1	2	-	-
PO Target	-	-	-	-	-	1.6	2	1.6	2	-	1	1.6	-	-



### **Course Outcome (Quality Management, KOE-085)**

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category (KC)
After comp	eletion of the course, the student will be able to	Level (BL)	
C01	Describe the concepts of quality management system in order to managing a product quality.	Understand	Conceptual
CO2	Describe the effective organizational structure and the methods of managing the economic and the human aspects in controlling the quality of a product.	Understand	Conceptual
CO3	Demonstrate the application of Statistical Quality Control techniques in managing a product quality proactively.	Apply	Conceptual, Procedural,
CO4	Describe the various techniques for the evaluation and the improvement of reliability and maintainability as well as the motivational techniques (zero defects, quality circles) for the adaptability of a new quality control system.	Understand	Conceptual, Procedural,
CO5	Describe the ISO 9000 Series, Taguchi method and JIT in improving a product quality.	Understand	Conceptual, Procedural

### **<u>CO-PO Mapping (Quality Management, KOE-085)</u></u>**

Course	Programme Outcome (PO)												PSO	PSO
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	3	2	-	-	1	-	-	-	-	-	2	-	-	-
CO2	3	2	-	-	1	-	-	-	-	-	2	-	-	-
CO3	3	2	-	-	1	-	-	-	-	-	2	-	-	-
CO4	3	2	-	-	1	-	-	-	-	-	2	-	-	-
C05	3	2	-	-	1	-	-	-	-	-	1	-	-	-
PO Target	3	2	-	-	1	-	-	-	-	-	1.8	-	-	-



### **Course Outcome (Data Warehousing & Data Mining, KOE-093)**

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
	Able to demonstrate the Data warehouse architecture and its		
C01	functionalities	Understand	С, Р
CO2	Able to illustrate the various design methodologies of Data Warehouse	Apply	С, Р
CO3	Able to apply the concept of preprocessing in Data mining	Apply	С, Р
<b>CO4</b>	Able to compare different methodologies used in data mining like classification and clustering	Analyze	С, Р
C05	Able to assess different approaches of data warehousing and data mining with various technologies	Evaluate	С, Р

#### **<u>CO-PO Mapping (Data Warehousing & Data Mining, KOE-093)</u></u>**

Course		Programme Outcome (PO)													
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
C01	2	2	-	1	-	-	-	-	-	-	2	-	3	-	
CO2	2	2	3	-	2	-	-	-	2	-	2	-	2	2	
CO3	3	2	2	1	1	-	-	-	-	-	-	-	2	2	
CO4	2	3	2	1	2	-	-	-	-	-	-	-	-	2	
CO5	1	2	-	2	2	-	-	-	-	-	-	-	1	2	
PO Target	2	2.2	2.35	1.25	1.75	-	-	-	2	-	2	-	2	2	



# **KIET Group of Institutions, Ghaziabad**

**Department of Computer Science & Engineering** 

#### **Course Outcome (Project, KCS-851)**

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After com	pletion of the course, the student will be able to	(BL)	Category (KC)
C01	Identify socio technical problems and their feasibility.	Analyze	Conceptual
CO2	Apply a suitable software development model for the real-world problem.	Apply	Procedural
CO3	Design engineering solutions to complex problems by utilizing a systematic approach.	Create	Metacognitive
CO4	Solve the real-life problems by using the various tools, techniques, and coding practices.	Apply	Metacognitive
CO5	Take part in written and verbal communication with professional and community at large.	Apply	Procedural
C06	Analyze the stakeholder expectations to ensure successful project outcomes.	Analyze	Procedural

## CO-PO Mapping (Project, KCS-851)

Course Co dou		Programme Outcome (PO)									PSO	PSO		
Course Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	3	3	-	-	3	3	-	-	2	1	3	3	2	2
CO-2	3	3	3	3	3	-	-	-	2	-	2	3	-	3
CO-3	3	3	3	3	3	-	-	-	3	-	2	3	2	3
CO-4	3	3	3	3	3	2	2	2	2	-	2	3	1	3
CO-5	-	-	-	-	-	2	2	3	2	3	-	3	-	-
CO-6	2	-	-	-	3	2	-	3	2	3	-	3	2	2
PO Target	2.80	3	3	3	3	2.25	2	2.67	2.17	2.33	2.25	3	1.75	2.60



# **KIET GROUP OF INSTITUTIONS, GHAZIABAD**

## **Department of Computer Science**



# **Department of Computer Science**

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Website: www.kiet.edu



## **KIET GROUP OF INSTITUTIONS, GHAZIABAD**

## **Department of Computer Science**

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4	KCS 302	COMPUTER ORGANISATION AND ARCHITECTURE									
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S No.	Subject Code	Subject Name									
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S No.	Subject Code	Subject Name										
1	KCS 077	DISTRIBUTED SYSTEM										
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1	KOE085	QUALITY MANAGEMENT									
2	KOE094	DIGITAL AND SOCIAL MEDIA MARKETING									
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# **CO PO and Mapping of CO PO 2nd Year**

### Session:- 2022-23 Semester:- 3rd

### **Theory**

## **Course Outcome (Sensor & Instrumentation KOE034)**

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After complet	to	Process Level (BL)	(KC)
CO 1	Understand the use of sensors for measurement of displacement, force and pressure.	Understand	Conceptual, Procedural
CO 2	Understand the uses of sensors in industry for measurement of temperature, position, accelerometer, vibration sensor, flow and level.	Understand	Conceptual, Procedural
CO 3	Apply the concept of virtual instrumentation in automation industries.	Apply	Factual, Procedural
CO 4	Understand, Identify and use data acquisition methods.	Understand	Conceptual, Procedural
CO 5	Understand intelligent instrumentation in industrial automation.	Understand	Conceptual, Procedural

## **CO-PO Mapping (Sensor & Instrumentation KOE034)**

Course Code:	se 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	3	-	-	2	-	-	-	-	-	-	-	2	-
CO 3	3	2	-	-	3	-	-	-	-	-	-	-	2	-
CO 4	2	3	-	-	-	-	-	-	-	-	-	-	-	-
CO 5	2	2	-	-	2	-	-	-	-	-	-	-	2	-
PO Target	2.60	2.40	-	-	2.25	-	-	-	-	-	-	-	2.20	-

## **Course Outcome (Universal Human Values ,KVE 301)**

СО	Statement of Course	Bloom's	Knowledge Category
No.	Outcome	Cognitive	(KC)
After completie	on of the course, the student will be able to	<b>Process Level</b>	
		( <b>BL</b> )	
CO 1	Understand the process of self-	Understand	Conceptual, Procedural
	exploration and meaning of natural acceptance.		
CO 2	Explore the concept of harmony in the human being (in Myself) being 'I' & 'body' as separate entity	Analyze	Conceptual, Procedural
CO 3	Analyze the process of developing harmony in family and society.	Analyze	Conceptual, Procedural
<b>CO 4</b>	Analyze the process of developing the harmony in nature and existence.	Analyze	Conceptual, Procedural
CO 5	Apply the role of holistic understanding of harmony of professional ethics.	Apply	Conceptual, Procedural

## **<u>CO-PO Mapping (Universal Human Values ,KVE 301)</u></u>**

Course Code:		Programme Outcome (PO)												
	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	-	-	-	-	-	2.60	1.80	2.60	1.80	1	1	1.80	-	1.66

## **Course Outcome (Data Structure, KCS-301)**

CO No. After completion	Statement of Course Outcome n of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO 1	Implement the concepts of Array and Linked list after understanding the basics of programming, data structure and their memory representation.	Apply	Factual, Conceptual
CO 2	Understand the primitive operations on various linear data structures like stack & queue along with their variants, and apply them on various applications like Expression Solving, Tower of Hanoi, String methods, etc.	Apply	Conceptual, Procedural

CO 3	Implementation of various searching and sorting algorithms using data structure concepts.	Apply	Conceptual, Procedural
<b>CO 4</b>	Implementation of various data structures on different applications and analyse the working in terms of time and space complexity using asymptotic notations	Analyze	Conceptual, Metacognitive
CO 5	Implementation of Non-linear data structures like Trees and Graphs; and perform various operations on these data structures.	Apply	Conceptual, Procedural

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

Course Code:	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
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	2	-	-	-	-	-	-	-	-	2	3	2

# <u>Course Outcome</u> (Computer Organization and Architecture,KCS 302)

CO No. After complet	Statement of Course Outcome ion of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO 1	Relate the fundamental components of the basic computer system with its organization.	Apply	Conceptual, Procedural
CO 2	Interpret the design of ALU, fixed- floating-point representations and various multiplication, division operations on binary numbers.	Apply	Conceptual, Procedural
CO 3	Illustrate control unit design and concept of pipelining.	Understand	Conceptual
<b>CO 4</b>	Apply the concept of different types of memories.	Apply	Conceptual, Procedural
CO 5	Relate the fundamental components of the basic computer system with its organization.	Apply	Conceptual, Procedural

## <u>CO-PO Mapping</u> (Computer Organization and Architecture,KCS 302)

Course Code:		Programme Outcome (PO)													
	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	<b>Bloom's Cognitive</b>	Knowledge Category
After complet	ion of the course, the student will be able	Process Level (BL)	(KC)
	to		
CO 1	Illustrate basic mathematical objects	Analyze	Conceptual
	such as sets, functions, relations and		& Procedural
	natural numbers and their properties .		
CO 2	Examine various structures and	Apply	Conceptual
	properties of modern algebra		& Procedural
CO 3	Solve substantial experience of formal	Apply	Conceptual
	and logical arguments		& Procedural
CO 4	Justify the mathematical properties via	Evaluate	Conceptual
	the formal language of propositional and		& Procedural
	predicate logic.		
<b>CO 5</b>	Use graphs and trees, as tools to	Apply	Conceptual
	visualize and simplify the problems.		& Procedural

## <u>CO-PO Mapping</u> (Discrete Structures & Theory of Logic,KCS 303)

Course Code:		Programme Outcome (PO)													
	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	-	-	-	1.3	1.4	1.5	2.2

## **Course Outcome (Computer System Security KNC301)**

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After complet	ion of the course, the student will be able	Process Level (BL)	(KC)
_	to		
CO 1	Interpret software bugs that pose cyber security threats and their mitigation techniques.	Understand	Factual, Conceptual
CO 2	Explain confidentiality policies and confinement techniques to secure the system.	Understand	Conceptual
CO 3	Demonstrate cyber-attack scenarios to web browsers and web servers and their mitigation techniques.	Understand	Conceptual
CO 4	Apply cryptography techniques and different protocols for secure transfer of data over the network.	Apply	Conceptual, Procedural
CO 5	Illustrate Internet Security Problems and Protocols used for secure transaction.	Understand	Conceptual

## **<u>CO-PO Mapping (Computer System Security KNC301)</u></u>**

Course Code:		Programme Outcome (PO)												
	1	1 2 3 4 5 6 7 8 9 10 11 12												
CO 1	1	2	-	-		3	-	-	-	-	-	-	-	-
CO 2	2		-	-	2	1	-	-	-	-	-	-	-	-
CO 3	2	2	-	-	-	1	-	-	-	-	-	-	-	-
CO 4	3	2	-	-	-	1	-	-	-	-	-	-	-	2
CO 5	2	1	-	-	-	2	-	-	-	-	-	-	-	
PO Target	2	1.7	-	-	2	1.6	-	-	-	-	-	-	-	2

## **Practical**

## **Course Outcome (DSUC Lab,KCS-351)**

CO No.	Statement of Course Outcome	<b>Bloom's Cognitive</b>	Knowledge Category
After comple	tion of the course, the student will be able to	Process Level (BL)	(KC)
CO 1	Understand the basics of programming and data structure like arrays, linked lists, with their memory representation.	Understand	Conceptual, Procedural
CO 2	Apply the concept to perform Stack, Queue, Tree and Graph array and Linked List Representation.	Apply	Conceptual, Procedural
CO 3	Make a solution for the available problem and implement them using data structure concept.	Apply	Conceptual, Procedural
CO 4	Analyse the working of multiple data structure and help to solve existing problem.	Analyze	Conceptual, Procedural

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

Course Code:		Programme Outcome (PO)												
	1	1 2 3 4 5 6 7 8 9 10 11 12												
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	3	-	-	-	-	-	-	2.25	2.5	2.5

# Course Outcome (CO Lab,KCS 352)

CO No.	Statement of Course Outcome	<b>Bloom's Cognitive</b>	Knowledge Category
After complet	ion of the course, the student will be able	Process Level (BL)	(KC)
	to		
CO 1	Build half adder and full adder using	Apply	Conceptual, Procedural
	basic logic gates and solve code		
	conversions: binary to gray and gray to		
	binary		
CO 2	Construct Multiplexers (4x1, 8x1) and	Apply	Conceptual, Procedural
	Decoders (2x4, 3x8)		
CO 3	Make use of excitation tables of various	Apply	Conceptual, Procedural
	flip flops.		
<b>CO 4</b>	Model 8-bit Arithmetic Logical unit	Apply	<b>Conceptual, Procedural</b>
<b>CO 5</b>	Model 8-bit input output system with	Apply	Conceptual, Procedural
	four-bit internal registers.		

## **<u>CO-PO Mapping (CO Lab,KCS 352)</u>**

Course Code:		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	<b>Bloom's Cognitive</b>	Knowledge Category
	Outcome	Process Level (BL)	(KC)
After comple	etion of the course, the student will be		
	able to		
CO 1	Implement various operations of	Apply	Conceptual & Procedural
	set, Boolean algebra, recursion,		
	and mathematical induction.		
CO 2	Implement the concept of	Apply	Conceptual & Procedural
	minimum cost spanning tree and		
	shortest path in graphs.		
CO 3	Illustrate permutation,	Apply	Conceptual & Procedural
	combination, and probability for		
	various problems.		

## **CO-PO Mapping (DSTL Lab,KCS 353)**

Course Code:				Р	rogran	nme C	Outcon	ne (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	Knowledge Category
After completion	n of the course, the student will be able to	Process Level (BL)	(KC)
<u> </u>	Identify the problem to solve and most	Apply	Concentual
01	its requirements.	Арргу	Conceptual
CO 2	Design the solution of the problem identified by using modern tools.	Create	Metacognitive
CO 3	Develop a project using advanced technologies.	Evaluate	Metacognitive
CO 4	Develop analytical thinking and professional skills to prepare for final year project.	Evaluate	Metacognitive
CO 5	Demonstrate the developed project and its outcome to the evaluators.	Apply	Conceptual

## **CO-PO Mapping (Mini project, KCS354)**

Course Code:		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	1.7		2	2.4	2.3	2	3	2.2	2.2



# **CO PO and Mapping of CO PO 2nd Year**

## Session:- 2022-23 Semester:- 4<sup>th</sup>

### **Theory**

#### **Course Outcome (Mathematics IV, KAS 402)**

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After c	ompletion of the course, the student will be able to	Process Level (BL)	Category (KC)
CO1	Study the methods to solve Partial Differential Equations	Apply	Conceptual & Procedural
CO2	Apply the concept of separation of variables to solve wave, heat, Laplace and transmission equations.	Apply	Conceptual & Procedural
CO3	Evaluate Moments, M, G.F Correlations, linear regression.	Evaluate	Conceptual & Procedural
CO4	Apply the concept of probability to solve discrete and continuous probability distributions.	Apply	Conceptual & Procedural
CO5	Apply the concept of sampling to study t-test, F-test and Chi-square test, One-way Analysis of Variance (ANOVA).	Apply	Conceptual & Procedural

Course Code:		Programme Outcome (PO)										PSO		
	1	2 3 4 5 6 7 8 9 10 11 12 1											1	2
CO 1	3	2	-	-	-	-	-	-	-	-	-	2	1	2
CO 2	3	3	2	-	-	-	-	-	-	-	-	2	1	2
CO 3	3	3	2	3	2	-	-	-	-	-	-	2	2	2
CO 4	3	3	1	1	1	-	-	-	-	-	-	1	1	1
CO 5	3	3	2	3	3	2	2	-	-	-	-	2	2	3
PO Target	3	3	1.75	2.3	2.3	2	2	-	-	-	-	1.8	1.6	3.3

## **Course Outcome (Technical Communication, KAS 401)**

CO_No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category (KC)
After comple	tion of the course, the student will be able to	Process Level (BL)	
CO 1	Analyze the nature and objective of Technical Communication relevant for the workplace as Engineers.	Analyze	Conceptual, Procedural
CO 2	Analyze the nature and objective of Technical Communication relevant for the workplace as Engineers.	Apply	Conceptual, Procedural
CO 3	Imbibe presentation strategies inputs by presentation skills to enhance confidence in facing diverse audience in required situations at workplace.	Apply	Conceptual, Procedural
CO 4	Analyze the application of the technical communication to promote their competence for various media like Report generation, Resume design, GD and Interview etc.	Evaluate	Conceptual, Procedural
CO 5	Evaluate voice-dynamics and select appropriate cues for their own efficacy as fluent & efficient communicators.	Evaluate	Conceptual, Procedural

## **CO-PO Mapping (Technical Communication, KAS 401)**

C301		Programme Outcome (PO)											PS	PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO 1									2	3		3			
CO 2									2	3		3			
CO 3									2	3		3			
CO 4									2	3		3			
CO 5									2	3		3			
PO Target									2	3		3			

## **Course Outcome (Operating Systems, KCS 401)**

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After complet	ion of the course, the student will be able to		
CO 1	Understand the basic concepts, functions, and types of operating systems.	Understand	F, C
CO 2	Identify process synchronization techniques to achieve better performance of a computer system.	Understand	F, C
CO 3	Apply different process scheduling algorithms and deadlock management techniques.	Apply	C, P

<b>CO 4</b>	Illustrate various memory management mechanism used in the operating system.	Apply	C, P
CO 5	Demonstrate input and output management; and how the operating system performs the disk management.	Apply	С, Р

## **CO-PO Mapping (Operating Systems, KCS401)**

C301		Programme Outcome (PO)												)
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	2	-	-	-	-	-	-	-	-	-	-	-	2	-
CO 2	3	2	-	-	-	-	-	-	-	-	-	2	2	-
CO 3	3	2	-	-	-	-	-	-	-	-	-	2	2	-
CO 4	3	2	-	-	-	-	-	-	-	-	-	-	2	-
CO 5	3	2	-	-	-	-	-	-	-	-	-	-	2	-
PO Target	2.8	2	-	-	-	-	-	-	-	-	-	2	2	-

## <u>Course Outcome (Theory of Automata and Formal</u> <u>Languages, KCS 402)</u>

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completi	on of the course, the student will be able to		
CO 1	Understand basic concepts of automata	Understand	С
	theory and formal languages.		
CO 2	Construct finite automata and regular	Apply	C, P
	expressions for regular languages.		
CO 3	Construct regular and context-free grammar	Apply	С, Р
	for formal languages.		
CO 4	Construct the pushdown automata for	Apply	C, P
	context-free languages.		
CO 5	Construct Turing machines for formal	Apply	C, P
	languages.		

## <u>CO-PO Mapping (Theory of Automata and Formal</u> <u>Languages, KCS402)</u>

C301	Programme Outcome (PO)											<b>PSC</b>	PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	2	-	-	-	-	-	-	-	-	-	1	1	-	-
CO 2	3	2	2	-	-	-	-	-	-	-	1	2	2	-
CO 3	3	2	2	-	-	-	-	-	-	-	1	2	2	-
CO 4	3	2	2	-	-	-	-	-	-	-	1	2	2	-
CO 5	3	2	2	-	-	-	-	-	-	-	1	2	2	-
PO Target														

## **Course Outcome (Microprocessor, KCS 403)**

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After complet	tion of the course, the student will be able to		
CO 1	Understand the fundamental concepts of microprocessor including architecture, addressing modes, etc.	Understand	F,C
CO 2	Illustrate the detailed architecture of 8085 microprocessor with its instruction set.	Apply	C,P
CO 3	Illustrate the detailed architecture of 8086 microprocessor with its instruction set.	Apply	C,P
<b>CO 4</b>	Implement simple programs of 8085/8086 microprocessor using assembly language programming.	Apply	C,P
CO 5	Understand concepts of peripherals devices interfaced with microprocessor(8085/8086)	Understand	С

# **CO-PO Mapping (Microprocessor, KCS 403)**

C301		Programme Outcome (PO)											PSC	)
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	-	-	-	-	-	-	-	-	-	-	1	1	-
CO 2	3	-	-	-	-	-	-	-	-	-	-	1	1	-
CO 3	3	-	1	-	-	-	-	-	-	-	-	1	2	-
CO 4	3	-	1	-	-	-	-	-		-	-	1	2	-
CO 5	2	-	-	-	-	-	-	-		-	-	1	1	-
PO Target	2.8	-	1	-	-	-	-	-		-	-	1	1.4	-

## **Course Outcome (Python Programming ,KNC 402)**

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After complet	ion of the course, the student will be able to		
CO 1	To read and write simple Python programs.	Understand	С

CO 2	To understand the basic concept and develop Python programs with conditionals statement and loops.	Apply	C,P
CO 3	To define Python functions and to use Python data structures lists, tuples, dictionaries, set.	Apply	C,P
CO 4	Apply various method to do input/output with files and file handling in Python	Apply	C,P
CO 5	Analysis of various searching ,sorting and merging in Python	Apply	C,P

# **CO-PO Mapping (Python Programming ,KNC 402)**

C301		Programme Outcome (PO)													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO 1	3	2	1	-	-	-	-	-	-	-	-	2	1	-	
CO 2	3	2	1	1	-	-	-	-	-	-	-	2	2	1	
CO 3	3	2	1	1	-	-	-	-	-	-	-	2	2	1	
CO 4	3	3	2	1	-	-	-	-		-	-	2	2	1	
CO 5	3	3	2	1	-	-	-	-		-	-	2	2	1	
PO Target	3	2.4	1.4	1	-	-	-	-		-	-	2	1.8	1	
#### **Practical**

#### **Course Outcome (Operating Systems Lab, KCS 451)**

CO_No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After comple	etion of the course, the student will be able to	(BL)	(KC)
CO 1	Understand and apply knowledge of basic UNIX/LINUX commands to solve various software problems and to automate real time applications.	Understand	С
CO 2	Compare and contrast among various CPU scheduling algorithms and apply knowledge to identify the best scheduling algorithm as per software requirement.	Understand	С
CO 3	Understand and implement the concept of process synchronization tool like semaphore to solve mutual exclusion problem in order to coordinate concurrent processes.	Apply	С
CO 4	Apply knowledge of process management techniques to design and solve various process synchronization problems like Producer Consumer problem, Reader Writers problem and dining philosophers' problem.	Apply	С
CO 5	Understand and apply the concepts of deadlock in operating systems to design and implement various deadlock avoidance algorithms like Banker's algorithm	Apply	С

#### **CO-PO Mapping (Operating Systems Lab, KCS451)**

C301				Р	rogra	mme	Outco	ome (I	P <b>O</b> )				PSC	)
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	2	-	-	-	-	-	-	-	-	-	-	2	-	-
CO 2	3	2	-	-	-	-	-	-	-	-	-	2	2	-
CO 3	3	2	-	-	-	-	-	-	-	-	-	2	2	-
CO 4	3	2	-	-	-	-	-	-	-	-	-	2	2	-
CO 5	3	2	-	-	-	-	-	-	-	-	-	2	-	-
PO Target	2.8	2	-	-	-	-	-	-	-	-	-	2	2	-

# Course Outcome (Microprocessor Lab, KCS 452)

CONo.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After complet	ion of the course, the student will be able		
to			
CO 1	Implement basic arithmetic operations using assembly language on 8085 microprocessor.	Conceptual,Procedural	Apply (BL-3)
CO 2	Implement advanced arithmetic operations using assembly language on 8085 microprocessor.	Conceptual,Procedural	Apply (BL-3)
CO 3	Simulate interfacing circuits with microprocessor.	Conceptual,Procedural	Apply (BL-3)

#### **CO-PO Mapping (Microprocessor Lab, KCS 452)**

C301				Р	rogra	mme	Outco	ome (l	PO)				PSC	)
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	2	-	-	-	-	-	-	-	1	-	-	2	1	-
CO 2	2	-	-	-	-	-	-	-	1	-	-	2	1	-
CO 3	2	-	-	-	-	-	-	-	1	-	-	2	1	-
PO Target	2	-	-	-	-		-	-	1	-	-	2	1	-

#### **Course Outcome (Python Programming Lab, KCS453)**

CONo.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After complete able to	on of the course, the student will be		
CO 1	Understand basic syntax of python implementation	Understand	Conceptual
CO 2	Apply looping and conditional constructs	Apply	Conceptual, Procedural
CO 3	Develop programs related with list data structure	Apply	Conceptual, Procedural

CO4	Design programs related to tuples, dictionary and set	Apply	Conceptual, Procedural
C05	Illustrate searching, sorting and merging in python	Apply	Conceptual, Procedural

## **<u>CO-PO Mapping (Python Programming Lab,KCS453)</u>**

C301				Р	rogra	mme	Outco	ome (l	PO)				PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	1	2	1	3	-	-	-	-	-	-	1	1	1
CO 2	3	2	2	2	3	-	-	-	-	-	-	2	2	2
CO 3	3	3	2	2	3	-	-	-	-	-	-	2	2	2
CO4	3	2	2	2	3	-	-	-	-	-	-	2	2	2
CO5	3	2	2	3	3	-	-	-	-	-	-	2	2	2
PO Target	3	2	2	2	3	-	-	-	-	-	-	1.8	1.8	1.8



# **CO PO and Mapping of CO PO 3rd Year**

#### Session:- 2020-21 Semester:- 5<sup>th</sup>

#### **Theory**

#### **Course Outcome**

#### (Database Management System, KCS 501)

CO No.	Statement of Course Outcome	<b>Bloom's Cognitive Process</b>	Knowledge
After comple	etion of the course, the student will be able to	Level (BL)	Category (KC)
CO 1	Illustrate the knowledge of database concepts along with design of database for real world problem.	Conceptual, Procedural	Apply
CO 2	Apply query processing techniques (relational algebra and relational calculus expressions) with knowledge of relational model and query languages.	Conceptual, Procedural	Apply
CO 3	Analyze the database redundancy problem using normalization techniques for good database design.	Conceptual, Procedural	Analyze
CO 4	Implement the database transactions processing concepts and study the broad range of database management issues in concurrent environment.	Conceptual, Procedural	Apply
CO 5	Apply the different concurrency control techniques on transactions and study of database recovery methods.	Conceptual, Procedural	Apply

#### <u>CO-PO Mapping</u> (Database Management System,KCS 501)

Course Code:		Programme Outcome (PO)												
	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	2.8	2.8	-	-	1	-	-	-	-	-	-	1	1	-

#### **Course Outcome (Compiler Design, KCS 502)**

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After comp	bletion 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.	Understand	Conceptual
CO 2	Illustrate various parsing techniques i.e. Top- Down and Bottom-up parsers using LL, SLR, CLR, and LALR parsing table.	Apply	Conceptual, Procedural
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.	Apply	Conceptual, Procedural
CO 4	Discuss data structures used for Symbol Table, Run time organization and error in phases of compiler.	Understand	Conceptual
CO 5	Apply code optimization and Generation techniques resulting in Target Code.	Apply	Conceptual, Procedural

#### **CO-PO Mapping (Compiler Design, KCS 502)**

Course Code:		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	Knowledge Category
After completion	n of the course, the student will be able to	Process Level (BL)	( <b>KC</b> )
CO 1	Understand different asymptotic	Understand	Conceptual
	performance analysis methods		
CO 2	Analyze performance analysis methods	Analyze	Conceptual, Procedural
	for sorting and searching algorithms.		
CO 3	Understand the concept of Advance	Understand	Conceptual
	Data Structures		
CO 4	Apply different problem solving paradigms to solve computational problems	Metacognitive	Conceptual, Procedural
CO 5	Understand the concept of NP-Problem,	Understand	Conceptual
	Randomized and Approximations		
	algorithm.		

#### <u>CO-PO Mapping</u> (Design and Analysis of Algorithm,KCS 503)

Course Code:		Programme Outcome (PO)												
	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	1.6	1.6	-	-	-	-	-	-	-	-	2	2.2	-

#### **Course Outcome (Web Designing, KCS 052)**

CO No. After completio	Statement of Course Outcomen of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO 1	<b>Understand</b> the principles of web design and different types of websites.	Understand	Conceptual
CO 2	Apply the concepts of HTML & elements and in designing and	Apply	Conceptual, Procedural
CO 3	development of web pagesImplement the properties of CascadingStyle Sheet (CSS) in designing web	Apply	Conceptual, Procedural
CO 4	pages.         Apply the concepts of JavaScript to validate the website and to make it interactive.	Apply	Conceptual, Procedural
CO 5	<b>Utilize</b> the concept of Web Hosting and SEO for the quick response of websites.	Apply	Conceptual, Procedural

#### **CO-PO Mapping (Web Designing, KCS 052)**

Course Code:	Programme Outcome (PO)													
	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	<b>Bloom's Cognitive</b>	Knowledge Category
After completion	of the course, the student will be able to	Process Level (BL)	(KC)
CO 1	<b>Understand</b> the need for machine learning for various problem solving.	Understand	Conceptual
CO 2	<b>Analyze</b> a wide variety of machine learning techniques and learn how these techniques are suitable for solving different real-world problems.	Apply	Conceptual
CO 3	<b>Understand</b> the latest trends in machine learning.	Understand	Conceptual

<b>CO 4</b>	<b>Apply</b> various machine learning algorithms to real-world problems.	Apply	Conceptual, Procedural
CO 5	<b>Optimize</b> the models learned and report on the expected accuracy.	Apply	Conceptual, Procedural

#### **CO-PO Mapping (Machine Learning Techniques, KCS055)**

Course Code:	Programme Outcome (PO)													
	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	1.6	1.6	-	-	-	2	-		0.2	1	1	1	2	-

## <u>Course Outcome (Constitution of India, Law and</u> <u>Engineering KNC501)</u>

CO No.	Statement of Course Outcome	<b>Bloom's Cognitive</b>	Knowledge Category
After complet	tion of the course, the student will be able	Process Level (BL)	(KC)
	to		
CO 1	Identify and explore the basic features and modalities about the Indian Constitution.	Understand	Factual, Conceptual
CO 2	Differentiate and relate the functioning of Indian Parliamentary System at the Centre and State Level.	Analyze	Factual, Procedural
CO 3	Differentiate different aspect of Indian Legal System and its related Bodies.	Understand	Factual, Conceptual
CO 4	Discover and apply different laws and regulations related to engineering practices.	Understand	Factual, Conceptual
CO 5	Correlate the role of Engineers with different Organisations and Governance Models.	Understand	Factual,Conceptual

# **<u>CO-PO Mapping (Constitution of India, Law and</u>** <u>Engineering KNC501)</u>

Course Code:				]	Progra	mme (	Outcor	ne (PO	))				PSO								
	1	2	3	4	5	6	7	8	9	10	11	12	1	2							
CO 1	-	-	-	-	-	3	2	-	-	-	-	-	-	-							
CO 2	-	-	-	-	-	3	2	-	-	-	-	-	-	-							
CO 3	-	-	-	-	-	3	2	1	-	-	-	-	-	-							
CO 4	-	-	-	-	-	3	2	2	-	2	-	-	-	-							
CO 5	-	-	-	-	-	2	2	2	2	2	2	2	-	-							
PO Target	-	-	-	-	-	2.80	2	1.67	2	2	2	2	-	-							

#### **Practical**

#### **Course Outcome (DBMS Lab,KCS 551)**

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After complet	tion of the course, the student will be able	Process Level (BL)	(KC)
	to		
CO 1	<b>Implement</b> the concepts of table creation, views, indexes and other database objects using Oracle 10g express edition.	Apply	Procedural
CO 2	<b>Solve</b> simple and complex queries using DDL, DML, DCL and TCL.	Apply	Procedural
CO 3	<b>Utilize</b> entity integrity, referential integrity, key constraints and domain constraints on database.	Apply	Procedural
CO 4	<b>Implement</b> the PL/SQL blocks, procedure functions, packages and triggers, cursors.	Apply	Procedural
CO 5	<b>Design</b> a database schema for a real- world problem like Hospital management system.	Apply	Procedural

#### **CO-PO Mapping (DBMS Lab,KCS 551)**

Course Code:	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 (CD LAB,KCS 552)**

CO No. After completio	Statement of Course Outcome on of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO 1	Implement the Lexical Analyzer using C language.	Apply	Conceptual, Procedural
CO 2	Utilize the LINUX utility LEX tool for Lexical Analysis.	Apply	Conceptual, Procedural
CO 3	Experiment with the knowledge of different parsers (Operator precedence, shift reduce etc.) using C language.	Apply	Conceptual, Procedural
CO 4	Implement Intermediate code generation and optimization for various expressions.	Apply	Conceptual, Procedural

## **CO-PO Mapping (CD LAB,KCS 552)**

Course Code:					Progr	amme (	Outcon	ne (PO)					PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	3	-	-	-	-	-	-	1	-	-	1	-	-
CO 2	3	3	-	-	2	-	-	-	1	-	-	1	-	-
CO 3	3	3	-	-	-	-	-	-	1	-	-	1	-	-
CO 4	3	3	-	-	-	-	-	-	1	-	-	1	-	-
PO Target	3	3	-	-	2	-	-	-	1	-	-	1	-	-

#### **Course Outcome (DAA LAB,KCS 553)**

CO No.	Statement of Course Outcome	<b>Bloom's Cognitive</b>	Knowledge Category
After comple	tion of the course, the student will be able to	Process Level (BL)	(KC)
CO 1	Implement algorithms to solve problems by iterative approach.	Apply	Conceptual & Procedural
CO 2	Implement algorithm to solve problems by divide and conquer approach	Apply	Conceptual & Procedural
CO 3	Implement algorithms to solve problems by the Greedy algorithm approach.	Apply	Conceptual & Procedural
<b>CO 4</b>	Implement algorithms to solve problems by Dynamic programming, backtracking, branch and bound approach.	Apply	Conceptual & Procedural

#### **CO-PO Mapping (DAA LAB,KCS 553)**

Course Code:	Programme Outcome (PO)													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	2	1	2	2	-	-	-	-	-	-	1	3	-
CO 2	3	2	1	2	2	-	-	-	-	-	-	1	3	-
CO 3	3	2	1	2	2	-	-	-	-	-	-	1	3	-
CO 4	3	2	1	2	3	-	-	-	-	-	-	1	3	-
PO Target	3	2	1	3	3	-	-	-	-	-	-	1	3	-

#### Course Outcome (Mini Project, KCS 554)

СО	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
No.		Process Level (BL)	( <b>KC</b> )
After comp	letion of the course, the student will be able to		
CO 1	Identify a problem and gather its requirements.	Apply	Conceptual
CO 2	Design a solution of the problem using latest tools & techniques.	Create	Metacognitive
CO 3	Develop a project using latest technology.	Evaluate	Metacognitive
CO 4	Develop professional skills and critical thinking to prepare for major project.	Evaluate	Metacognitive
CO 5	Demonstrate an ability to present project works to the evaluators.	Apply	Conceptual

#### **CO-PO Mapping (Mini Project, KCS 554)**

Course Code:			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	2.4	-	2.4	3	1	-	0.8	2.4	1.4	2	2.8	2.2	2.2

#### Session:- 2020-21 Semester:- 6<sup>th</sup>

#### **Theory**

#### <u>Course Outcome (SOFTWARE ENGINEERING, KCS-</u> <u>601)</u>

CO_No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After complet	tion of the course, the student will be able to	Frocess Level (DL)	Category (KC)
CO 1	<b>Explain</b> various software characteristics and different types of software development models.	K2	Conceptual
CO 2	<b>Prepare</b> the contents of SRS and apply basic software quality assurance practices.	К3	Procedural
CO 3	<b>Apply</b> various methods for software design techniques.	К3	Procedural
CO 4	<b>Illustrate</b> various software testing techniques.	К3	Procedural
CO 5	<b>Examine</b> various software maintenance and project management techniques.	К3	Procedural

#### **CO-PO Mapping (SOFTWARE ENGINEERING, KCS 601)**

Course Code:		Programme Outcome (PO)													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO 1	2	2	1	2	-	-	-	-	-	-	1	-	-	1	
CO 2	2	2	1	2	-	-	-	-	-	-	1	-	-	1	
CO 3	2	2	2	2	-	-	-	-	-	-	1	-	-	1	
CO 4	2	2	2	2	-	-	-	-	-	-	1	-	-	1	
CO 5	2	2	2	2	-	-	-	-	-	-	1	-	-	1	
PO Target	2	2	1	2	-	-	-	-	-	-	1	-	-	1	

#### **Course Outcome (Web Technology, KCS 602)**

CO_No. After complet	Statement of Course Outcome tion of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO 1	Develop Java programs for window/web-based applications with understanding of web development Strategies and Protocols governing Web.	Apply	Р
CO 2	Design web pages using HTML, XML, CSS and JavaScript.	Apply	Р
CO 3	Create of web pages using JavaScript & AJAX and client-server environment using socket programming	Apply	Р
CO 4	Build enterprise level applications and manipulate web databases using JDBC	Apply	Р
CO 5	Design interactive web applications using Servlets and JSP	Create	Р

#### **CO-PO Mapping (Web Technology, KCS 602)**

Course Code:	Programme Outcome (PO)													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	1	2	3	3	-	-	-	-	-	-	-	-	3	-
CO 2	1	1	3	1	-	-	-	-	-	-	-	-	2	-
CO 3	1	2	3	3	-	-	-	-	-	-	-	-	3	-
CO 4	1	2	3	3	-	-	-	-	-	-	-	2	3	-
CO 5	2	2	3	3	-	-	-	-	-	-	-	2	3	-
PO Target	1.2	1.8	3	2.6	-	-	-		-	-	-	2	2.8	-

#### **Course Outcome (Computer Networks, KCS 603)**

CO_No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After compl	etion of the course, the student will be able	Process Level	(KC)
to		( <b>BL</b> )	
CO 1	Understand the basic concepts of networking, networking models, schemes and devices.	Understand	С
CO 2	Understand the different protocols used at application layer i.e. HTTP, SNMP, SMTP, FTP, TELNET and VPN. and the recent technologies on networking.	Understand	С
CO 3	Understand the data link layer and its components like channel allocation, framing, error and flow control techniques in computer networks.	Understand	С
CO 4	Apply various methods of Logical addressing, subnetting & Routing Mechanism on different practical scenarios.	Apply	С, Р
CO 5	Analysis of various Transport Layer function i.e. Port addressing, Connection Management, Error control and Flow control mechanism based on the QoS parameters.	Analyze	C, P

# **CO-PO Mapping (Computer Networks, KCS 603)**

Course Code:			PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	2	1	-	-	-		-	-	-	-	2	1	-
CO 2	3	2	1	1	-	-		-	-	-	-	2	2	1
CO 3	3	2	1	1	-	-		-	-	-	-	2	2	1
CO 4	3	3	2	1	-	-		-	-	-	-	2	2	1
CO 5	3	3	2	1	-	-		-	-	-	-	2	2	1
PO Target	3	2.4	1.4	1		-		-	-	-	-	2	1.8	1

# Course Outcome (Big Data, KCS 061)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After complete be able to	etion of the course, the student will		
CO 1	Understand the knowledge of Big Data concepts, its architecture and applications.	Understand	Factual
CO 2	Demonstrate the components of Hadoop and Map Reduce Framework.	Apply	Procedural
CO 3	Demonstrate the Hadoop Distributed File System and setting up it's environment.	Apply	Procedural
CO 4	Demonstrate NoSQL database and tools for job scheduling.	Apply	Procedural
CO 5	Demonstrate Pig, HIVE and HBASE to abstract Hadoop Eco System.	Apply	Procedural

## **CO-PO Mapping (Big Data, KCS 061)**

Course Code:	Programme Outcome (PO)													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	3	2	2	-	-	-	-	-	-		-	2	-	2
CO 2	3	3	2	-	2	-	-	-	-		-	2	2	2
CO 3	3	1	2	-	-	-	-	-	-		-	2	-	2
CO 4	3	3	2	-	3	-	-	-	-		-	2	2	2
CO 5	3	3	2	-	3	-	-	-	-		-	2	1	2
PO Target	3	2.4	2	-	2.7	-	-	-	-		-	2	1.7	2

#### <u>Course Outcome (Software Project Management,</u> <u>KOE068)</u>

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After complet	tion of the course, the student will be able to		
CO 1	Understand the project planning activities and the key phases of project management.	Understand	С
CO 2	Utilize an appropriate management strategy after identifying the different project contexts	Apply	C,P
CO 3	Apply different software process models and cost estimation models for development of a project.	Apply	C,P
CO 4	Make use of various project activities to compute critical path for risk analysis.	Apply	C,P
CO 5	Discuss the role of professional ethics in team building for successful software development.	Understand	С

#### **<u>CO-PO Mapping (Software Project Management, KOE068)</u></u>**

Course Code:	Programme Outcome (PO)													PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO 1	-	-	-	-	-	-	-	-	-	-2	3	2	-	2	
CO 2	1	2	-	-	-	-	-	-	3	-	3	-	-	-	
CO 3	2	2	-	-		-	-	-	-	-	-	-	-	-	
CO 4	2	2	-	-		-	-	-	-	-	-	-	-		
CO 5	-	-	2	-	-	-	-	2	3	2	-	2	-	2	
PO Target	1.67	2	2	-	-	-	-	2	3	2	3	2	-	2	

#### **Course Outcome**

#### (Indian Tradition, Culture and Society, KNC 602)

CO_No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After comple	tion of the course, the student will be able to	Process Level (BL)	(KC)
CO 1	To identify and understand the roots and details of Society State and Polity in India.	Apply	Conceptual
CO 2	To understand the importance of Indian Literature, Culture, Tradition, Practices and to apply in the present system.	Apply	Conceptual
CO 3	To analyze Indian Religion, Philosophy, Practices and in shadow of Pre-Vedic and Vedic Religion, Buddhism, Jainism, Six System Indian Philosophy and to apply in the present system.	Apply	Conceptual
CO 4	To analyze the Science, Management and Indian Knowledge System and to apply in the present system.	Apply	Conceptual
CO 5	To evaluate the Indian Architect, Engineering and Architecture in Ancient India, India's Cultural Contribution to the World and to create an environment in Arts and Cultural for the present system.	Understand	Conceptual

#### <u>CO-PO Mapping (Indian Tradition, Culture and</u> <u>Society,KNC 602)</u>

Course Code:	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	2	2	2	1	-	2	2	-	
CO 2	2	1	2	-	2	2	2	2	2	1	2	3	1	1	
CO 3	1	1	2	-	-	2	2	2	1	2	-	2	-	1	
CO 4	2	2	2	-	-	2	2	2	2	2	2	2	1	2	
CO 5	2	1	2	2	2	3	2	2	2	2	1	2	1	2	
PO Target	1.75	1.4	2	1.5	2	2.2	2	2	1.8	1.6	1.6	2.2	1.25	1.5	

#### **Practical**

#### <u>Course Outcome (SOFTWARE ENGINEERING, KCS</u> <u>651)</u>

CO_No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After comple able to	etion of the course, the student will be	Process Level (BL)	(KC)
CO 1	<b>Discover</b> ambiguities, inconsistencies and incompleteness in SRS document and to identify its functional and non-functional requirements.	К3	Procedural
CO 2	<b>Demonstrate</b> use case diagrams by identifying different actors and use cases from a given problem statement.	К3	Procedural
CO 3	<b>Prepare</b> a class diagram after identifying classes and association among them.	К3	Procedural
CO 4	<b>Illustrate</b> UML diagrams and associations among them by identifying the logical sequence of activities undergoing in a system.	К3	Procedural
CO 5	Articulate the use of modern engineering tools for software specification, design, implementation and testing.	К3	Procedural

#### **CO-PO Mapping (SOFTWARE ENGINEERING, KCS 651)**

Course Code:		Programme Outcome (PO)												
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	2	2	2	2	2	-	-	-	-	-	-	-	-	1
CO 2	2	2	2	2	2	-	-	-	-	-	-	-	-	1
CO 3	2	2	2	3	2	-	-	-	-	-	-	-	-	1
CO 4	2	2	2	2	2	-	-	-	-	-	-	-	-	1
CO 5	2	2	2	2	2	-	-	-	-	-	-	-	-	1
PO Target	2	2	2	3	2	-	-	-	-	-	-	-	-	1

# Course Outcome (WT LAB,KCS 652)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level	Knowledge Category (KC)
After complet to	tion of the course, the student will be able	(BL)	
CO 1	<b>Develop</b> static web pages using HTML.	К3	Conceptual,Procedural
CO 2	<b>Develop</b> Java programs for window/ web- based applications.	К3	Conceptual, Procedural
CO 3	<b>Design</b> dynamic web pages using JavaScript and XML.	К3	Conceptual, Procedural
CO 4	<b>Design</b> dynamic web page using server site programmingEx. ASP/JSP/PHP	К3	Conceptual, Procedural
CO 5	<b>Design</b> server site applications using JDBC, ODBC and session tracking API	К6	Metacognitive

## **CO-PO Mapping (WT LAB,KCS 652)**

Course Code:		Programme Outcome (PO)													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO 1	-	2	3	3	2	-	-	-	-	-	-	2	3	-	
CO 2	2		3	3	2	-	-	-	-	-	-	2	3	-	
CO 3	-	2	3	3	2	-	-	-	-	-	-	2	3	-	
CO 4	-	2	3	3	2	-	-	-	-	-	-	2	3	-	
CO 5	-	-	3	3	2	-	-	-	-	-	-	2	3	-	
PO Target	2	2	3	3	2	-	-	-	-	-	-	2	3	-	

## **Course Outcome (CN LAB,KCS 653)**

#### Course Outcome (Computer network LAB, KCS653)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After comple	etion of the course, the student will		
be able to			
CO 1	Examine the networking commands and configuring network hardware.	Understand	С
CO 2	Demonstrate the working of different network topologies.	Apply	С
CO 3	Apply the concepts of Framing, stop & wait ARQ, Network addressing and routing.	Apply	С
CO 4	Construct the Transport layer protocols based sockets for various applications.	Apply	С
CO 5	Implement transport and security mechanisms.	Apply	С

#### **CO-PO Mapping (Computer network LAB, KCS653)**

Course Code:	Programme Outcome (PO)													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	2	2	2	3	2	-	-	-	-	-	-	2	1	2
CO 2	2	-	2	2	2	-	-	-	-	-	-	2	2	-
CO 3	2	2	3	3	-	-	-	-	-	-	-	-	1	1
CO 4	3	3	2	3	2	-	-	-	-	-	-	-	1	2
CO 5	3	2	3	2	2	-	-	-	-	-	-	2	1	2
PO Target	1.8	1.6	1.8	2.6	2	-	-	-	-	-	-	2	1.2	1.4



#### **CO PO and Mapping of CO PO 4th Year**

#### Session:- 2022-23 Semester:- 7<sup>th</sup>

#### **Theory**

#### **Course Outcome (Distributed System, KCS 077)**

CO No.	Statement of Course Outcome	Bloom's	Knowledge Category
After comp	bletion of the course, the student will be able to	Cognitive Process Level (BL)	(KC)
CO 1	Understand the theoretical foundation of distributed system along with its applications in real world	Understand	Conceptual
CO 2	Analyze various methods suggested for process synchronization and deadlock handling in context of distributed environment	Analyze	Meta cognitive
CO 3	Apply agreement protocols to solve various problems in distributed system.	Apply	Conceptual, Procedural
CO 4	Apply different mechanism developed for recovery from fault and fault tolerance	Apply	Conceptual, Procedural
CO 5	Understand and solve various issues in distributed transaction	Apply	Conceptual, Procedural

#### **CO-PO Mapping (Distributed System, KCS 077)**

Course Code:		Programme Outcome (PO)													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO 1	2	2	-	2	-	-	-	-	-	-	-	2	-	-	
CO 2	3	2	-	3	-	-	-	-	-	-	-	2	-	-	
CO 3	3	2	-	2	-	-	-	-	-	-	-	1	-	-	
CO 4	3	2	-	2	-	-	-	-	-	-	-	1	-	-	
CO 5	3	2	-	2	-	-	-	-	-	-	-	2	-	-	
PO Target	2.8	2	-	2.2	-	-	-	-	-	-	-	1.6	-	-	

#### **Course Outcome (Cloud Computing,KCS713)**

CO No.	Statement of Course Outcome	<b>Bloom's Cognitive</b>	Knowledge Category
After completio	on of the course, the student will be able to	Process Level (BL)	( <b>KC</b> )
CO 1	Articulate the main concepts, key	Understand	Factual, Conceptual
	technologies, strengths and limitations		
	of cloud computing.		
CO 2	Understand the key and enabling	Understand	Factual, Conceptual
	technologies like virtualization in		
	Cloud Computing		
CO 3	Interpret the architecture of cloud	Understand	Factual, Conceptual
	computing, cloud storage, service and		
	delivery models.		
CO 4	Understand the core issues of cloud	Understand	Factual, Conceptual
	computing such as resource		
	management and security.		
CO 5	Classify cloud technologies for the next	Analyze	Factual, Conceptual,
	generation computing paradigm.		Procedural

# **<u>CO-PO Mapping (Cloud Computing,KCS713)</u>**

Course Code:			PSO											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	2	2	-	2	2	-	-	-	-	-	-	2	2	-
CO 2	2	2	-	2	2	-	-	-	-	-	-	2	2	-
CO 3	2	3	-	2	2	-	-	-	-	-	-	2	2	-
CO 4	2	3	-	2	3	-	-	-	-	-	2	2	2	-
CO 5	2	3	-	3	3	-	-	-	-	-	2	3	3	-
PO Target	2	2.6		2.2	2.4	-	-	-	-	-	0.8	2.2	2.2	-

#### <u>Course Outcome</u> (Project Management Entrepreneurship,KHU702)

CO No. After completio	Statement of Course Outcomen of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO 1	Understand the theories of entrepreneurship and entrepreneurial development programmes.	Understand	Factual
CO 2	Explain innovative business ideas and market opportunities for business development.	Understand	Conceptual
CO 3	Discuss the importance of project life cycle and different types of appraisal techniques.	Understand	Conceptual
CO 4	Predict different types of project financing requirements on the basis of cash flow statements.	Apply	Conceptual, Procedural
CO 5	Describe social entrepreneurship opportunities and risk management techniques in social enterprises.	Understand	Conceptual

#### <u>CO-PO Mapping</u> (Project Management Entrepreneurship,KHU702)

CO NO.					Prog	ramme	e Out	come	( <b>PO</b> )				PSO	
	1	2 3 4 5 6 7 8 9 10 11 12												
CO 1	-	-	-	-	-	1	-	-	2	-	3	-	-	
CO 2	-	-	-	-	-	1	-	-	3	-	3	-	-	1
CO 3	-	-	-	-	-	2	-	-	3	-	3	-	-	-
CO 4	-	-	-	-	-	1	-	-	3	2	3	-	-	-
CO 5	-	-	-	-	-	3	2	-	2	-	3	-	-	2
PO Target	-	-	-	-	-	1.6	2	-	2.6	2	3	-	-	1.5

#### **Course Outcome (Renewable Energy Resources, KOE074)**

CO No	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After co	ompletion of the course, the student will be able to	r rocess Lever (BL)	
CO 1	Understand the renewable and non- renewable sources of energy.	Understand	Factual
CO 2	Explain the working principle of various solar energy systems.	Understand	Factual, Conceptual
CO 3	Understand the Geothermal & Tidal energy, its mechanism of production and its applications.	Understand	Factual, Conceptual
CO 4	Interpret and Identify the significance of Winds energy as an alternative form of energy	Remember	Factual, Conceptual
CO 5	Discover the basics of renewable, biomass energy sources and relevant thermodynamics	Understand	Factual, Conceptual

#### **CO-PO Mapping (Renewable Energy Resources, KOE074)**

Course Code:		Programme Outcome (PO)														
	1	1 2 3 4 5 6 7 8 9 10 11 12														
CO 1	2	3	-	-	-	-	3	-	-	-	-	-	-	-		
CO 2	2	2	-	-	-	-	3	-	-	-	-	-	-	-		
CO 3	3	3	-	-	-	-	-	-	-	-	-	3	-	-		
CO 4	3	3	-	-	-	-	2	-	-	-	-	2	-	-		
CO 5	2	2	-	-	-	-	3	-	-	-	-	-	-	-		
PO Target	2.4	2.4	-	-	-	-	2.2	-	-	-	-	1	-	-		



#### **Course Outcome (Distributed Systems Lab, KCS751A)**

CO No. After completion	Statement of Course Outcome on of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO 1	Implement Logical Clock and Vector Clock using Java or C	Apply	Conceptual, Procedural
CO 2	Implement Distributed Mutual Exclusion using Java or C	Apply	Conceptual, Procedural
CO 3	Implement file transfer mechanism across network and accessing methods of remote systems using network protocols and sock programs with the use of Java or C	Apply	Conceptual, Procedural

#### **CO-PO Mapping (Distributed Systems Lab, KCS751A)**

Course Code:		Programme Outcome (PO)													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO 1	3	2	-	1	-	-	-	-	-	-	-	-	-	-	
CO 2	3	1	-	1	-	-	-	-	-	-	-	-	-	-	
CO 3	3	1	-	1	-	-	-	-	-	-	-	-	-	-	
PO Target	3	1.33	-	1	-	-	-	-	-	-	-	-	-	-	

#### **Course Outcome (Internship Assesment, KCS752)**

CO No. After comp	Statement of Course Outcome letion of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO 1	Understanding the modern tools used in the field of Computer science and engineering for product development.	Understand	Conceptual
CO 2	Demonstrate ethical conduct and professional accountability while working in a team for the benefit of society.	Analyze	Conceptual and Procedural
CO 3	Understand the resources requirement and planning to facilitate the project success.	Understand	Conceptual

## **CO-PO Mapping (Internship Assesment, KCS752)**

Course Code:	Programme Outcome (PO)													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	2	2	-	-	-	-	-	-	-	-	2	1	-	-
CO 2	2	2	-	-	-	-	-	-	-	-	2	2	-	-
CO 3	2	2	-	-	-	-	-	-	-	-	2	2	-	-
PO Target	2	2	-	-	-	-	-	-	-	-	2	1.66	-	-

#### Course Outcome (Project Lab, KCS753)

CO No. After completion	<b>Statement of Course Outcome</b> n of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO 1	Select and Summarize all aspects of real life problem through information gathering	Understand	Factual
CO 2	Apply acquired knowledge to develop a conceptual model	Apply	Conceptual, Procedural
CO 3	Analyse the outcome of each phase using various tools and techniques	Analyze	Conceptual, Procedural
CO 4	Justify/ Defend the validity of idea or quality of result with the previous data/ result	Evaluate	Conceptual, Procedural
CO 5	Test the working model and Integrate all the phases.	Create	Conceptual, Procedural

#### **<u>CO-PO Mapping (Project Lab, KCS753)</u>**

Course Code:	Programme Outcome (PO)													PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO 1	-	3	3	3	3	1	2	-	3	2	3	3	3	3	
CO 2	-	3	3	3	2	1	2	-	3	2	3	3	3	3	
CO 3	-	3	3	3	2	1	2	-	3	2	3	3	3	3	
CO 4	-	3	3	3	2	1	2	-	3	2	2	2	3	3	
CO 5	-	3	3	3	2	1	2	-	3	2	1	2	3	3	
PO Target	-	3	-	3	2.2	1	2	-	3	2	1.8	2.6	3	3	



## **CO PO and Mapping of CO PO 4th Year**

#### Session:- 2021-22 Semester:- 8<sup>th</sup>

#### **Theory**

#### **Course Outcome (Quality Management, KOE 085)**

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)	
After complet able to	ion of the course, the student will be			
CO 1	Understand the quality concept and its components	Understand	F, C	
CO 2	Understand the concepts of quality management and performance excellence in organization	Understand	F, C	
CO 3	Apply the several techniques and quality management tools.	Apply	С, Р	
CO 4	Analyze the defects, reliability and maintainability after the interpretation of test results.	Analyze	С, М	
CO 5	Understand the quality system certification process.	Understand	F, C	

#### **CO-PO Mapping (Quality Management, KOE 085)**

Course Code:		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	1	-	-
CO 2	-	-	-	-	-	-	-	2	2	2	-	1	-	-
CO 3	-	-	-	-	1	-	-	-	-	2	1		-	-
CO 4	-	1	1	-	-	-	-	-	2	2	1	1	-	-
CO 5	-	-	-	-	-	-	-	2	-	2	-	-	-	-
PO Target	-	1	1	-	1	1	-	2	2	2	1	1	-	-

#### <u>Course Outcome (Rural Development Administration</u> <u>& Planning, KHU 801)</u>

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)		
After complet able to	ion of the course, the student will be				
CO 1	<b>Describe</b> the definitions, concepts and components of Rural Development.	Understand	С		
CO 2	<b>Explain</b> the importance, structure, significance, resources of Indian rural economy.	Understand	C/F		
CO 3	<b>Identify</b> rural development programmes and their impact.	Understand	C/F		
<b>CO 4</b>	<b>Explain</b> the use of different methods for human resource planning.	Understand	С		
CO 5	Acquire knowledge about rural entrepreneurship.	Understand	С		

#### <u>CO-PO Mapping (Rural Development Administration</u> <u>& Planning, KHU 801)</u>

Course Code:		Programme Outcome (PO)										PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	-	-	-	-	-	3	-	1	-	1	-	1	-	-
CO 2	-	-	-	-	-	3	-	1	2	1	-	1	-	-
CO 3	-	-	-	-	-	2	3	1	2	1	-	1	-	-
CO 4	-	-	-	-	-	3	-	1	1	1	-	1	-	-
CO 5	-	-	-	-	-	1	-	1	-	1	-	1	-	-
PO Target	-	-	-	-	-	2.4	3	1	1.6	1	-	1	-	-

#### <u>Course Outcome (Digital and Social Media</u> <u>Marketing, KOE 094)</u>

CO_No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After comple be able to	etion of the course, the student will	Process Level (BL)	(KC)
CO 1	Acquire the knowledge about the Digital Marketing, the various channels through which it operates, and its role in marketing strategy.	Understand	F, C
CO 2	Gain understanding of various social media platforms and the creation of blogs.	Apply	С, Р
CO 3	Assess the best practices in digital marketing field across various markets and gain knowledge of various digital marketing tool.	Understand	F, C
CO 4	Formulate Digital marketing Strategies for an organization.	Apply	С, М
CO 5	Analyze the privacy, security, content and ethicality issues associated with digital and social media platforms.	Analyze	С, М

## <u>CO-PO Mapping (Digital and Social Media Marketing,</u> <u>KOE 094)</u>

Course Code:		Programme Outcome (PO)								PSO				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	-	-	-	-	-	2	-	-		3	-	1	-	-
CO 2	-	-	-	-	-	1	-	-	1	3	-	1	-	-
CO 3	-	-	-	-	2	1	-	-	2	3		1	-	-
CO 4	-	-	-	-	2	2	-	-	2	3	-	1	-	-
CO 5	-	-	-	-	-	2	-	-	1	3	-	1	-	-
PO Target	-	-	-	-	2	1.6	-	-	1.2	3	-	1	-	-

## **Practical**

# Course Outcome (Project,KCS851)

CO_No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category (KC)	
After comple will be able t	tion of the course, the student o	Level (BL)		
CO 1	Select and Summarize all aspects of real life problem through information gathering.	Understand	С, Р	
CO 2	Apply acquired knowledge to develop a conceptual model.	Apply	С, Р	
CO 3	Analyse the outcome of each phase using various tools and techniques	Analyze	C, P	
CO 4	Justify/ Defend the validity of idea or quality of result with the previous data/ result.	Evaluate	С, Р	
CO 5	Test the working model and demonstrate the results by publishing the idea/outcome.	Create	С, Р	

Course		Programme Outcome (PO)									PSO			
Code:														
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO 1	-	3	3	3	3	1	2	-	3	2	3	3	3	3
CO 2	-	3	3	3	2	1	2	-	3	2	3	3	3	3
CO 3	-	3	3	3	2	1	2	-	3	2	3	3	3	3
<b>CO 4</b>	-	3	3	3	2	1	2	-	3	2	2	2	3	3
CO 5	-	3	3	3	2	1	2	-	3	2	1	2	3	3
PO Target	-	3	3	3	1.2	1	2	-	3	2	1.2	1.2	3	3



KIET GROUP OF INSTITUTIONS, GHAZIABAD Department of Information Technology

# **Course Outcomes and CO-PO, PSO Mapping**



# Session 2022-23 Department of Information Technology

13 KM STONE, GHAZIABAD-MEERUT ROAD, GHAZIABAD - 201206

Website: www.kiet.edu

# **KIET GROUP OF INSTITUTIONS, GHAZIABAD Department of Information Technology**

#### Index

	4 <sup>th</sup> Semester							
S No.	Subject Code	Subject Name						
1	KAS 402	Maths-IV						
2	KAS401	Technical Communication						
3	KCS402	Theory of Automata & Formal Language						
4	KCS401	Operating System						
5	KIT401	Web Designing						
6	KNC402	Python Programming						
7	KCS451	Operating Systems Lab						
8	KIT451	Web Designing Lab						
9	KCS453	Python Programming Lab						

6 <sup>th</sup> Semester							
S No.	Subject Code	Subject Name					
1	KCS601	Software Engineering					
2	KIT601	Data Analytics					
3	KCS603	Computer Networks					
4	KIT061	Blockchain Architecture Design					
5	KOE061	Real Time Systems					
6	KNC602	Indian Tradition, Culture and Society					
7	KCS651	Software Engineering Lab					
8	KIT651	Data Analytics Lab					
9	KCS653	Computer Networks Lab					

	8 <sup>th</sup> Semester							
S No.	Subject Code	Subject Name						
1	KHU801	Rural Development						
2	KOE081	Cloud Computing						
3	KOE097	BigData						
4	KIT851	Project						

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# CO PO and Mapping of CO PO 2nd Year (2021-2025 BATCH)

#### Session:- 2022-23 Semester:- 4th

S.No.	Subject	Code
1	Maths-IV	KAS402
2	Technical Communication	KAS401
3	Theory of Automata & Formal Language	KCS402
4	Operating System	KCS401
5	Web Designing	KIT401
6	Python Programming	KNC402
7	Operating Systems Lab	KCS451
8	Web Designing Lab	KIT451
9	Python Programming Lab	KCS453

#### **Theory**

		At the end of course, students will be able to														
Maths-IV (KAS402)	CO1	Study the methods to solve Partial Differential Equations														C,P
	CO2	Apply the concept of separation of variables to solve wave , heat , Laplace and transmission equations														C,P
	CO3	Evaluate Moments, M.G.F, Correlations, linear regression.													5	C,P
	CO4	Apply the concept of probability to solve discrete and continuous probability distributions.													3	C,P
	CO5	Apply the concept of sampling to study t-test, F-test and Chi-square test, One way Analysis of												3	C,P	
		Variance (ANOVA).														
CO \ PO Mappi	ng	<b>PO1</b>	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
CO1		3	3	2	3	2	3	2	-	-	-	-	-	-	-	
CO2		3	3	3	3	2	3	1	-	-	-	1	3	-	-	
CO3		3	3	3	2	3	3	1	-	_	-	1	3	-	-	
CO4		3	3	3	2	3	3	2	-	-	-	2	3	-	-	
CO5		3	3	3	3	3	1	2	-	-	-	1	3	-	-	

	At the end of course, students will be able to														Knowledge	Knowledge
Technical Communication (KAS401)	CO1	Analyze the nature and objectives of Technical Communication relevant for workplace as Engineer.													4	Category C,P
	CO2	Utilizing the Technical Writing Skills for the purpose of Technical Communication and its exposure in various dimensions.														C,P
	CO3	Imbibe presentation strategies inputs with confidence in facing diverse audience in required situations a workplace.														C,P
	CO4	Estimate the application of Technical Communication to promote their competence for various media like report generation, resume design, GD, and Interview etc.													3	С,Р
	CO5	Evaluate Voice dynamics and select appropriate cues for their own efficacy as fluent and efficient communicators.												nd	5	C,P
CO \ PO Mapping		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
C01		-	-	-	_	_	-	_	-	2	3	-	3	-	-	
CO2		-	-	-	-	-	-	-	-	2	3	-	3	-	-	
CO3		-	-	-	-	-	-	-	-	2	3	-	3	-	-	
CO4		-	-	-	-	-	-	-	-	2	3	-	3	-	-	-
CO5		-	-	-	-	-	-	-	-	2	3	-	3	-	-	
					At t	he end o	of cours	e, studer	nts will	be able	to				Knowledge Level	Knowledge Category
----------------------	-----	-----------------	----------------------	-------------------	------------------	-----------	----------	-----------	----------	----------	-----------	-----------	------	------	--------------------	-----------------------
	CO1	Under	stand th	ne conc	ept of A	Automa	ta, Forn	nal Lang	guages a	and thei	r applica	tions.			2	F, C
Automata & Formal	CO2	Analy	se and o	constru	ct the r	egular e	xpressi	ons and	recogn	iser for	regular l	anguage	s.		4	F, C, P
Language	CO3	Illustr	ate grar	nmars	for diff	erent for	rmal lar	nguages							4	F, C, P
(KC5402)	CO4	Analy	se and o	constru	ct Push	down A	utomat	a.							4	F, C, P
	CO5	Design compu	n Turing utationa	g Macł l probl	nines an ems.	d explo	re the c	oncept	of decid	lability	and intra	ctability	of		6	F, C, P
CO \ PO Map		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	P	802
ping																
CO1		2	1	-	-	-	-	-	-	-	_	-	1	-		-
CO2		3	2	2	-	-	-	-	-	-	-	-	1	1		1
CO3		3	2	2	-	-	-	-	-	-	-	-	1	1		1
CO4		3	2	2	-	-	-	-	-	-	-	-	1	1		1
CO5		3	3	2	-	-	-	-	-	-	-	-	1	1		1

					At	the end	of cours	se, stude	ents will	be able (	to				Knowledge Level	Knowledge Category
	CO1	Under	stand the	e need, e	volution	and des	ign issue	es of var	ious cate	gories of	operating	systems.			2	F, C
Operating	CO2	Apply	different	CPU sc	heduling	g algorith	nms and	deadloc	k handlin	g metho	ds.				3	С, Р
System (KCS401)	CO3	Analyz enviroi	ze variou nment.	s concur	rency iss	sues and	differen	t synchr	onization	mechan	iisms in co	oncurrent	execution		4	С, Р
	CO4	Analy	y <b>ze</b> vario	us memo	ory mana	igement	techniqu	ues for e	fficient m	nemory a	allocation.				4	С, Р
	CO5	Apply opera	y differer ting syste	ructure in	3	С, Р										
CO \ PO Map	ping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PS	02
CO1		3	3	3	3	3	2	-	-	-	-	-	2	1	]	
CO2		3	3	3	3	3	1	-	-	-	-	-	2	2	]	
CO3		3	3	2	3	2	2	-	-	-	-	-	2	2	]	
CO4		3	3	2	3	2	2	-	-	-	-	_	2	2	]	
CO5		3	2	2	2	2	2	-	-	-	-	-	2	2	2	2

					A	t the e	nd of co	ourse, st	udents v	will be a	ble to				Knowledge Level	Knowledge Category
	CO1	Unde	rstand t	the prin	ciple of	f web p	age desi	gn and a	lbout typ	bes of we	ebsites.				2	F,C
Woh Docigning	CO2	Appl	y the ba	asic con	cept of	html ir	n web pa	ge desig	ning.						3	C,P
(KIT401)	CO3	Analy	yze the	elemen	ts of Ca	ascadin	g Style S	Sheet (C	SS) in fo	ormatting	g of web p	ages.			4	C,P
	CO4	Apply	y the ba	isic con	cept of	java sc	ript and	its appli	cation in	n designi	ing a web	page.			3	C,P
	CO5	Unde	rstand t	the basi	cs conc	ept of V	Web Ho	sting and	d Search	Engine	Optimizat	ion.			2	F,C
CO \ PO Mapj	ping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	P	802
CO1		3	3	3	3	2	1	1	1	1	1	1	2	3		3
CO2		3	3	3	3	2	1	1	1	1	1	1	2	3		3
CO3		3	3	3	3	2	1	1	1	1	1	1	2	3		3
CO4		3	3	3	3	2	1	1	1	1	1	1	2	3		3
CO5		3	3	3	3	2	1	1	1	1	1	1	2	3		3

					At the	e end of	course	, studen	ts will b	e able t	0				Knowledge Level	Knowledge Category
	CO1	Unders	tand and	write sin	nple Pyt	hon prog	grams								2	С, Р
Python	CO2	Illustra	te Python	program	ns with o	condition	nals and	loops.							4	С, Р
Programming (KNC-402)	CO3	Apply p	python fu	nctions a	along wi	th Pytho	on data s	structure	es –- lists	, tuples,	, dictiona	ries			3	С, Р
	CO4	Apply i	input/outp	out with	files and	l Illustra	te OOP	s concep	ots in pyt	hon					3	С, Р
	CO5	Implem	nent conco	epts of s	earching	, sorting	g and me	erging u	sing Pytl	10n Prog	gramming	<u>.</u>			3	С, Р
CO \ PO Map	ping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PS	02
CO1		3	1	2	1	3	_	_	_	-	-	-	1	1		1
CO2		3	2	2	2	3	-	-	-	-	-	-	2	2		2
CO3		3	3	2	2	3	-	-	-	-	-	-	2	2		2
CO4		3	2	2	2	3	-	-	-	-	-	-	2	2		2
CO5 3 2 2 3 3 - - - 2										2	2		2			

## **Practical**

					At t	he end o	of course,	, studer	nts will b	e able to	)				Knowledge Level	Knowledge Category
	CO1	Analy	ze vario	ous mode	rn genera	l-purpos	e operatii	ng syste	ems.						4	F, C
Operating	CO2	Imple	ment Cl	PU sched	uling algo	orithms f	for proces	ss sched	luling.						3	С, Р
System Lab	CO3	Const	truct the	solution	of proces	s synchr	onization	proble	m using s	semapho	res.				3	C, P
(KCS 451)	CO4	Analy	ze vario	ous memo	ory manag	gement to	echniques	s.							4	С, Р
	CO5 Implementation of disk scheduling techniques.														3	C, P
CO \ PO Map	oping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PS	02
CO1		3	3	3	3	3	2	_	-	_	1	_	3	1	1	1
CO2		3	3	2	3	2	2	-	-	-	-	-	2	2	1	1
CO3		3	3	3	3	3	1	-	-	-	-	-	2	2		2
CO4		3	3	2	3	2	3	-	-	-	-	-	2	2	4	2
CO5		3	2	2	2	2	3	-	-	-	-	-	2	2		3

					At th	ne end o	of cours	e, stude	nts will b	e able t	0				Knowledge Level	Knowledge Category
	CO1	Apply I	HTML b	asic con	cept in d	lesigning	g of We	b Page.							3	C,P
Web Designing Lab	CO2	Apply	various H	HTML ta	igs and a	ttributes	s in desi	gning of	f the web	pages.					3	C,P
(KIT451)	CO3	Analyz	e CSS fo	or impler	nenting	Web pag	ges.								4	C,P
	CO4	Apply J	Java Scri		3	C,P										
	CO5	Analyz	e and de	velop dif	fferent ty			4	C,P							
CO \ PO Map	ping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PS	02
CO1		3	3	3	3	2	1	1	1	1	1	1	2	3		3
CO2		3	3	3	3	2	1	1	1	1	1	1	2	3		3
CO3		3	3	3	3	2	1	1	1	1	1	1	2	3		3
CO4		3	3	3	3	2	1	1	1	1	1	1	2	3		3
CO5		3	3	3	3	2	1	1	1	1	1	1	2	3		3

					At the	e end of	course,	student	s will be	able to					Knowledge Level	Knowledge Category
Duthon	CO1	Unders	stand and	d write s	imple P	ython pr	ograms.								2	С, Р
Python Programming Lab	CO2	Illustra	te Pytho	on progra	ams with	n conditi	onals an	d loops.							4	С, Р
(KCS-453) -	CO3	Apply	python f	function	s along v	with Pytl	hon data	structur	es list	s, tuples	, dictiona	ries.			3	С, Р
	CO4	Apply	input/ou	tput wit	h files a	nd Illustr	rate OOI	Ps conce	pts in py	thon.					3	С, Р
	CO5	Implen	nent con	cepts of	searchir	ng, sortir	ng and m	erging u	ising Py	thon Pro	grammin	g.			3	С, Р
CO \ PO Mappi	ng	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PS	502
CO1		3	1	2	1	3	-	-	-	-	-	-	1	1		1
CO2		3	2	2	2	3	-	I	-	I	-	-	2	2		2
CO3		3	3	2	2	3	-	-	-	-	-	-	2	2		2
CO4		3	2	2	2	3	_	-	_	-	_	_	2	2		2
CO5		3	2	2	3	3	-	-	-	-	-	-	2	2		2

## CO PO and Mapping of CO PO 3rd Year (2020-2024 BATCH)

## Session:- 2022-23 Semester:- 6th

S.No.	Subject	Code
1	Software Engineering	KCS601
2	Data Analytics	KIT601
3	Computer Networks	KCS603
4	Blockchain Architecture Design	KIT061
5	Real Time Systems	KOE061
6	Indian Tradition, Culture and Society	KNC602
7	SE Lab	KCS651
8	Data Analytics Lab	KIT651
9	Computer Networks Lab	KCS653

## **<u>Theory</u>**

					At th	he end	of cours	e, studeı	nts will	be able	to				Knowledge Level	Knowledge Category
	CO1	Explain	n various	softwa	re charac	cteristic	s and ana	alyze dif	ferent s	oftware	Developr	nent Mod	els		2	C,M
Softwara	CO2	Demon design,	strate the develop	e conter ment m	nts of a S eet or ex	RS and acceed ap	apply bapplicable	asic soft standarc	ware qu ls.	ality ass	urance pr	actices to	ensure th	ıat	2	F,C
Engineering	CO3	Compa	re and co	ontrast v	various n	nethods	for softw	ware desi	ign.						3	М
(KCS601)	CO4	Formul develop	ate testin oment, a	ng strate nd unit	egy for so testing.	oftware	systems	using m	ethods ]	like func	ctional tes	ting, test	driven		3	F,P
	CO5	Utilize managi	and man	s while	5	C,M										
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO10	PO11	PO12	PSO1	PS	02
CO1		2	1	1	-	1	1	1	-	-	1	1	1	1		1
CO2		2	3	3	2	2	1	-	-	-	2	2	1	2		2
CO3		3	3	3	2	1	1	1	-	-	2	1	1	1		1
CO4		3	3	3	2	1	-	-	-	-	2	1	1	2		2
CO5		3	3	2	2	2	1	1	1	3	3	3	1	2		2

					At t	he end o	of course	e, studer	nts will	be able f	to				Knowledge Level	Knowledge Category
	CO1	Discuss	various	concept	s of data	analytic	cs pipeli	ne							2	С
Data	CO2	Apply c	lassifica	tion and	regress	ion techi	niques								3	C,P
Analytics	CO3	Explain	and app	oly minir	ng techni	iques on	streami	ng data							3	C,P
(KIT601)	CO4	Compar	re differe	ent cluste	ering and	d freque	nt patter	n mining	g algoritl	hms					4	М
	CO5	Describ	e the co		3	C,P										
CO \ PO Ma	pping	P01	PO2	PO3	PO4	PO5	<b>PO6</b>	<b>PO7</b>	PO8	PO9	PO10	PO11	PO12	PSO1	PS	02
CO1		3	3	3	3	3	2	-	-	-	-	2	3	3		3
CO2		3	3	3	3	3	2	-	-	-	-	1	1	2		2
CO3		3	3	3	3	3	2	-	-	-	-	1	1	3		3
CO4		3	3	3	3	3	2	-	-	-	-	1	1	2		2
CO5		3	3	3	3	3	2	-	-	-	-	1	3	3		3

					At th	e end of	f course,	student	s will be	able to					Knowledge	Knowledge
	CO1	Lindona	4 a m al 4 la a 4		401 0000	anta of a			in a and		ad daalaa				Level	Category
	COI	Unders	tand the I	undamen	tal conc	epts of c	omputer	network	ing and	its layer	ed design	architect	ure.		Z	F,C
	CO2	Apply the	e link lay	er proper	ties to de	etect erro	or and to	find the	solution	s for err	or control	and flow	control.		3	C,P
Computer Networks	CO3	Design th	ne subnet	addresses	s to form	n the LA	N and ca	lculate d	listance	among r	outers in a	subnet.			5	C,P
(KCS 603)	CO4	Underst and secu	and the d ure comm	uties of tr nunicatior	ansport channe	layer, se el.	ession lay	er and p	resentat	on layer	and also	focus on	network	security	2	F,C
	CO5	Understa	nd the fea	atures and	l operati	ons of v	arious ap	plicatior	n layer p	rotocols					2	F,C
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PS	02
CO1		3	3	1	1	3	-	-	-	1	2	1	3	1		1
CO2		3	3	1	1	3	-	-	-	1	2	1	3	2		2
CO3		3	3	2	3	3	-	-	-	1	2	2	3	2		3
CO4		3	2	2	3	3	1	-	1	1	2	2	3	3		3
CO5		3	2	1	1	3	1	-	1	1	2	1	3	2		3

					At	the end o	of course	, studen	ts will be	able to					Knowledge Level	Knowledge Category
	CO1	Unders	stand the	e basics o	of Blockc	hain tech	nology al	ong wit	h its prim	itives.					2	F
Blockchain	CO2	Unders	stand the	e require	ments of	basic con	sensus pr	otocol a	long with	ı scalabili	ty aspec	ts			2	F,C
(KIT061)	CO3	Apply	the sma	rt contra	cts to solv	ve the pro	blems of	existing	g system t	ising soli	dity and	hyper-lea	lger fabri	c tool	3	C,P
	CO4	Analyz	ze the Bl	lockchai	n techniq	ues for us	se cases li	ke Finar	nce and T	rade/Sup	ply				4	C,P
	CO5	Analyz	ze the Bl		4	C,P										
CO \ PO Maj	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PS	02
CO1		2	2	3	1	1	-	-	-	1	1	1	3	2		1
CO2		2	1	3	1	2	-	-	-	1	1	1	3	2		1
CO3		2	3	3	2	3	-	-	-	2	1	1	3	2		1
CO4		1	3	2	3	3	2	2	2	2	2	2	3	2		2
CO5		1	3	2	3	3	2	2	2	2	2	2	3	2		2

					At the e	nd of cou	rse, stude	ents will	be able t	0				Knowledge Level	Knowledge Category
	CO1	Describ	e concept	s of Real-	Time syst	tems and n	nodeling.							2	F,C
Real Time	CO2	Recogn	ize, and a	pply the c	haracteris	stics of a re	eal-time s	ystem in	context v	vith real t	ime schee	duling.		3	C,P
Systems	CO3	Classify	and anal	yze variou	is resourc	e sharing	mechanis	ms and th	eir relate	ed protoco	ols.			4	C,M
(KOE-001)	CO4	Interpre	nterpret the basics of real time communication by the knowledge of real time models and protocols.											5	F,C
	CO5	Apply the	he basics	of RTOS	in interpr	etation of	real time	systems.						5	C,P
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		3	3	2	2	2	2	-	-	2	2	2	3	-	3
CO2		3 3 3 3 3 3 2 2 1 3								-	3				
CO3 3 3 3 3 3					3	3	2	-	2	2	2	3	-	3	
CO4	CO4     3     3     3     3     3     2     2     2     1     3							-	3						
CO5		3	3	3	3	3	3	2	2	2	2	1	3	-	3

				Att	he end of	course, stu	idents w	ill be at	ole to				Knowledge Level	Knowledge Category
	CO1	Examine a Polity in I	nd associandia.	te the ancie	ent roots a	nd details o	f State 8	z Societa	l formation	n with the	understand	ling of	3	С
Indian Tradition	CO2	Examine t	he importa	ant knowled	lge of Indi	an Literatu	re, Cultu	re, Tradi	ition, Practi	ices to pre	esent Indian	n System.	3	С
Culture and Society	CO3	Correlate Jainism, S	the Indian ix System	Religion, P Indian Phil	hilosophy osophy in	, Practices a present sys	and shad tem.	ow of Pı	e-Vedic an	d Vedic I	Religion, B	uddhism,	4	С
(KNC602)	CO4	Explore th	plore the Indian Knowledge System, Science & Management in modern perspectives.											
	CO5	Examine t the World	xamine the Indian Architect, Engineering and Architecture in Ancient India, Indian's Cultural Contribution to 4 World and to explore an environment in Arts and Cultural for the present system.											
CO \ PO Mapping	PO1	PO2	PO2PO3PO4PO5PO6PO7PO8PO9PO10PO11PO12										PSO1	PSO2
CO1	-	-	-	1	-	2	-	1	1	-	-	1	-	-
CO2	-	-	-	1	-	2	-	1	1	-	-	1	-	-
CO3	-	-	-	1	-	2	-	-	1	-	-	1	-	-
CO4	-	-	-	1	-	2	2	-	-	-	2	1	-	-
CO5	-	-	-	1	-	2	2	1	-	-	-	1	-	-

## **Practical**

					At th	e end of	course, s	students	s will be	able to					Knowledge Level	Knowledge Category
	CO1	Under	stand the cting dev	fundame ices.	ntal conc	cepts of	computer	networl	ting, net	work topo	ologies a	nd netwo	ork		2	F,C
Computer Networks Lab	CO2	Learn	about UT	TP cabling	g and des	sign simj	ple compu	uter netv	vork LA	N.					4	F,C,P
(KCS 653)	CO3	Learn engine	earn the basic network commands and use techniques, skills, and modern networking tools necessary for ngineering practice.											for	5	C,P
	CO4	Validate the working of Wireshark sniffer to tape the wire and CISCO packet tracer to analyze the simulated network.											5	F,C,P		
	CO5	Analy networ	Analyze the working and performance of various protocols to describe the rapid progress of computer network technology.											puter	4	F,C,P
CO \ PO Mapp	oing	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO10	PO11	PO12	PSO1	PS	02
CO1		3	2	2	2	2	1	-	-	2	1	2	2	-	2	
CO2		3	2	2	2	2	1	-	1	2	2	2	3	2	3	
CO3		3 2 2 2 3 1 - 2 2 2 2 3 2							3							
CO4		3 2 2 2 3 2 - 3 3 3 3 3 2								2	3					
CO5		3	3	2	2	3	1	-	2	3	2	2	2	2	3	

					At the	e end of	course,	student	ts will be	e able to	)				Knowledge Level	Knowledge Category
	CO1	Identif functio	y ambig onal and	uities, in non-fun	consiste ctional r	encies an equirem	id incom ent	pletenes	s from a	require	ments sp	ecificatio	on and sta	ate	4	С
Software Engineering	CO2	Identif associa	y differe ate use c	ent actors ases with	s and use h differe	e cases f nt types	rom a gi of relati	ven proł onship	olem stat	tement a	nd draw	use case	diagram	to	5	С, Р
Lab (KCS651)	CO3	Draw a class diagram after identifying classes and association among them												5	С, Р	
	CO4	Graphi sequen	ically replice of ac	present v tivities u	various U Indergoi	JML dia ng in a s	grams, a system, a	and asso and repre	ciations esent the	among t m pictor	hem and ially	identify	the logica	al	5	С, Р
	CO5	Able to	o use mo	dern eng	gineering	g tools f	or specif	fication,	design, i	impleme	entation a	and testir	ıg		4	С, М
CO \ PO Mapp	oing	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	Р	SO2
CO1		3	3	3	2	3	2	2	-	1	-	1	3	1		1
CO2		3	3	3	3	3	2	2	-	1	-	1	3	1		1
CO3		3	3	3	3	3	2	2	-	1	-	1	2	1		1
CO4		3	3	3	3	3	2	2	-	1	-	1	1	2		2
CO5		3	3	3	3	3	2	2	-	1	-	1	2	3		3

					At tl	he end o	of course,	student	s will b	e able to	)				Knowledge Level	Knowledge Category
Data	CO1	Implem	ent num	erical ar	nd statist	ical anal	ysis on v	arious da	ata sourc	es.					4	F,P
Analytics	CO2	Apply d	lata prep	rocessir	ig and di	mensior	nality redu	uction m	ethods o	n raw da	ata.				5	C,P
Lab	CO3	Implem	Implement linear regression technique on numeric data for prediction.											4	C,P	
(KCS 051)	CO4	Execute	Execute clustering and association rule mining algorithms on different datasets											5	Р	
	CO5	Implem	Implement and evaluate the performance of KNN algorithms on different datasets.												4	P,M
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PS	02
CO1		3	3	3	3	3	2	-	-	-	-	2	3	3	3	3
CO2		3	3	3	3	3	2	-	-	-	-	1	1	2		2
CO3		3 3 3 3 3 2 1 1 3									3		3			
CO4		3 3 3 3 3 2 1 1 2									2	2	2			
CO5		3	3	3	3	3	2	-	-	-	-	1	3	3		3

## **CO PO and Mapping of CO PO 4th Year** (2019-2023 BATCH)

#### Session:- 2022-23 Semester:- 8th

S.No.	Subject	Code
1	Rural Development	KHU801
2	Cloud Computing	KOE081
3	BigData	KOE097
4	Project	KIT851

## **Theory**

					A	t the en	nd of co	urse, stu	idents wi	ill be abl	e to				Knowledge Level	Knowledge Category
	CO1	Unders	stand th	e definit	ions, co	oncepts	and con	nponents	s of Rura	l Develoj	oment				2	C
Rural Development	CO2	Disting	guish an	nong in	portanc	ce, struc	cture, sig	gnificano	ce and res	sources o	of Indian r	ural econo	omy		4	C, P
(KHU 801)	CO3	Apply	learning	g of area	develo	pment	program	is and se	e their in	npact.					3	C, P
	CO4	Apply	Apply knowledge of rural entrepreneurship.												3	C, P
	CO5	Evaluate different methods for human resource planning.												5	C, P	
CO \ PO Mapping		PO1	PO1     PO2     PO3     PO4     PO5     PO6     PO7     PO8     PO9     PO10     PO11     PO12     PS0										PSO1	PS	02	
CO1		-	-	-	-	-	2	2	3	2	1	2	1	3	1	
CO2		-	-	-	-	-	2	2	3	2	1	2	1	3	1	
CO3		-	-	-	-	-	2	2	3	3	1	2	1	3	1	
CO4		- - - - 2 2 3 3 1 2 1							3	1						
CO5		-	-	-	-	-	2	2	3	3	1	3	1	3	1	

					Att	the end	of cour	se, stud	ents will	be able	to				Knowledge Level	Knowledge Category
	CO1	Descrit	be archi	tecture	and un	derlying	g princi	ples of	cloud co	omputing	g.				2	С, Р
Cloud	CO2	Create	the Serv	vices Ori	ented Aı	chitect	ure and v	various t	ypes of c	loud serv	vices.				6	C,P
Computing	CO3	Analyz	e Inter c	loud res	ources n	nanager	nent clo	ud stora	ge						4	C,P
(KOE-081		service	services and their providers Assess security services and standards for cloud computing.													
	CO4	Explain and apply need, types and tools of Virtualization for cloud.											3	C,P		
	CO5	05 Analyze security, standards and applications of cloud technologies.											4	C,P		
CO \ PO Mappin	) g	PO1 PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 PS01										PSO1	P	SO2		
CO1		3	2	-	-	2	-	-	1	1	-	-	2	1		2
CO2		3	2	3	2	3	-	-	1	1	3	2	2	3		1
CO3 3 3 2 3 2 1 - 1					1	3	2	3		1						
CO4		2	2	-	-	2	-	-	-	-	-	-	2	3		1
CO5		2	3	2	3	3	-	-	-	1	-	-	2	3		1

					At	the end	of cours	e, studeı	nts will l	be able t	0				Knowledge Level	Knowledge Category
	CO1	Under techni	stand th ques.	e Big Da	ita concep	ot and rel	ated term	inologies	s like sec	urity, cha	racteristi	cs, analyt	ics, tools o	&	2	C
Big Data	CO2	Under	stand H	adoop Ed	cosystem	and appl	y MapRe	duce pro	grammin	g on Had	oop fram	ework.			3	C,P
(KOE-097)	CO3	Analy	Analyze Hadoop setup with JAVA interfaces.												4	C,P
	CO4 Apply resource management, NoSQL database and OOP programming on Hadoop Ecosystem using YARN, MongoDB, Spark and SCALA.											3	C,P,M			
	CO5	Analy	MongoDB, Spark and SCALA. Analyze the data processing and monitoring using Pig, Hive and HBase on Hadoop Ecosystem.												4	C,P,M
CO \ PO		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PS	02
Mapping		101	102	100	101	100	100	107	100	10/	1010	1011	1012	1001	10	
CO1		3	3	3	3	3	1		1	2		2	3	3		1
CO2		3	3	3	3	3	1		1	2		2	3	3		1
CO3		3 3 3 3 1 1 2 2 3										3		1		
CO4		3	3	3	3	3	1		1	2		2	3	3		1
CO5		3	3	3	3	3	1		1	2		2	3	3		1

#### **Practical**

					At tl	he end of	f course,	student	s will be	able to					Knowledge Level	Knowledge Category
	CO1	Select	and sum	marize al	1 aspects	of the re	al life pr	oblem th	rough su	irvey.					2	C
	CO2	Apply a	acquired	knowled	ge to dev	velop wo	rking mo	del and p	olan diffe	erent pha	ses for its	s executio	on.		3	C,P
Project KIT-851	CO3	Analyz	e outcom	e of each	n phase u	ısing vari	ous tools	s, techniq	jues, and	coding p	oractices.				4	C,P
	CO4	Justify/	ustify/defend opinions, validity of ideas or quality of work based on a set of criteria.												5	C,P
	CO5	Test the	Test the working model and modify related phase accordingly. Finally integrate all phases												6	C,P
CO \ P	0	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO10	PO11	PO12	PSO1	PS	02
Mappi	ng															
CO1		3	3	3	3	3	2	1	1	3	3	3	3	1	-	1
CO2		3	3	3	3	2	2	1	1	3	2	3	3	2	/	2
CO3		3 3 3 2 2 1 1 3 2 3 3 2								2		3				
CO4		3	3	3	3	2	2	1	1	3	2	2	3	2		3
CO5		3	3	3	3	2	2	1	1	3	2	1	2	2		3



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# **Course Outcome**



## **Session 2022-23**

## **Odd Semester**

**Department of Information Technology** 

13KMSTONE,GHAZIABAD-MEERUTROAD,GHAZIABAD-201206

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KIET GROUP OF INSTITUTIONS, GHAZIABA

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## Index

		3rd Semester
S No.	Subject Code	Subject Name
1	KOE-044	Sensor and Instrumentation
2	KVE-301	Universal Human Values
3	KCS-301	Data Structure
4	KCS-302	Computer Organization and Architecture
5	KCS-303	Discrete Structures & Theory of Logic
6	KNC-301	Computer System Security
7	KCS-351	Data Structures Using C Lab
8	KCS-352	Computer Organization Lab
9	KCS-353	Discrete Structure & Logic Lab
10	KCS-354	Mini Project or Internship Assessment
		5th Semester
S No.	Subject Code	Subject Name
1	KCS 055	Machine Learning Techniques
2	KNC 501	Constitution of India, Law and Engineering
3	KCS 501	Database Management Systems
4	KCS 503	Design And Analysis Of Algorithm
5	KCS 054	Object Oriented System Design
6	KIT 501	Web Technologies
7	KCS 551	Database Management Systems Lab
8	KCS 553	Design and Analysis of Algorithm Lab
9	KIT 551	Web Technologies Lab
10		Mini Project or Internship Assessment
		7th Semester
S No.	Subject Code	Subject Name
1	KCS 078	Deep Learning
2	KCS 071	Artificial Intelligence
3	KHU 702	Project Management & Entrepreneurship
4	KOE-076	Value Relationship & Ethical Human Conduct- For A Happy & Harmonious Society
5	KIT751	Artificial Intelligence Lab
6	KIT 752	Mini Project or Internship Assessment
7	KIT 753	Project

## **CO PO and Mapping of CO PO 2nd**

## **Year (2021 – 2025 BATCH)**

## Session 2022-23 Semester:- 3<sup>rd</sup>

		3 <sup>rd</sup> Semester
S No.	Subject Code	Subject Name
1	KOE-044	Sensor and Instrumentation
2	KVE-301	Universal Human Values
3	KCS-301	Data Structure
4	KCS-302	Computer Organization and Architecture
5	KCS-303	Discrete Structures & Theory of Logic
6	KNC-301	Computer System Security
7	KCS-351	Data Structures Using C Lab
8	KCS-352	Computer Organization Lab
9	KCS-353	Discrete Structure & Logic Lab
10	KCS-354	Mini Project or Internship Assessment

					At the end	d of cours	e, studen	ts will be	e able to	:			Blo Knov	om's Taxo vledgeDim	onomy  ension
	CO1	Apply the	he use sen	sors for n	neasureme	nt of displ	acement,	force and	l pressur	e.				K3/C,P	
	CO2	Employ accelero	commonl ometer, vit	y used se pration ser	nsors in in nsor, flow	dustry for and level.	measurer	nent of te	emperatu	ire, posit	tion,			K3/P,M	
Sensor and Instrumentation	CO3	Demons	strate the u	ise of virt	ual instrur	nentation i	in automa	tion indu	stries.					K2/C,P	
	CO4	Identify	and use d	ata acquis	sition meth	nods.								K3/F, C	
	CO5	Compre	hend intel	ligent ins	trumentati	on in indu	strial auto	omation.						K2/C,P	
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		3	2	2	2	1	-	-	-	-	1	1	1	2	2
CO2		2	3	3	2	1	-	-	-	-	1	1	1	2	2
CO3		2	2	3	3	1	-	-	-	-	1	1	1	2	2
CO4		2	3	3	2	1	-	-	-	-	1	1	1	1	1
CO5		1	3	2	3	1	-	-	-	-	1	1	1	1	1

				At t	he end of	course, st	udents w	vill be ab	le to:				Bloo Know	m's Taxo /ledge Dir	nomy  nension
	CO1	Understa	nd the ess	ential cor	nplementa	rily betwe	en 'VAL	UES" and	4 'SKILI	LS'.			Bloom's Taxono Knowledge Dime K2/F, 4/P K5/C K4/P,5/C K2/F,6/C PO12 PSO1 I 3 3 3 3 3 3 3		
	CO2	Understa	and how to	ensure s	ustained h	appiness a	nd prospe	erity.						K5/C	
Universal Human Values	CO3	Apply un profession	nderstandi	ng of valı	ues and hu	man realit	y to deve	lop a holi	stic pers	pective	owards li	fe, and		K4/P,5/C	
v ulues	CO4	Analyze nature.	harmony i	in nature	and exister	nce, and w	ork out t	heir mutu	ally fulf	illing pa	rticipation	n in the		K2/F,6/C	
	CO5	Analyze	ethical and	d unethic	al practice	s to actual	ize a harr	nonious e	environm	nent whe	rever the	y work.		K6/C	
CO \ PO M	lapping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		-	-	-	-	-	1	1	2	2	-	-	3		
CO2		_	_	-	_	_	2	2	3	3	-	-	3		
CO3		_	-	-	_	_	3	3	2	3	-	-	3		
CO4		-	-	-	-	-	2	3	2	3	-	-	3		
CO5		-	-	-	-	-	2	3	3	2	-	-	3		

				А	t the end	of course,	students	will be a	able to:				Bloom's Knowled	Taxonom lge Dimen	y  Ision
	CO1	Apply the	knowledg	e of vario	ous data st	ructures ar	nd its ope	rations.						K3   C, P	
	CO2	Apply sta	ndard algo	rithms fo	r searching	g and sorti	ng							K3   C, P	
Data Structure	CO3	Analyze e	efficiency of	of differen	nt algorith	ms using t	ime and s	pace con	nplexity					K4  C, P	
(KCS-301)	CO4	Explore th	ne concept	, applicat	ion and im	plementat	ion of rec	ursion.						K4   C, P	
	CO5	Implemen	t the suita	ble data s	tructure w	ith respect	to its per	formance	e to mod	el a real	world pro	oblem	K5,	K6   C, P,	М
CO \ PO M	apping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		2	2	2	2	1	-	-	-	-	-	-	2		
CO2		2	2	2	2	2	-	-	-	-	-	-	1		
CO3		3	2	2	2	1	-	-		1		1	2	1	
CO4		3	3	2	3	-	-	-		1		1	1	2	1
CO5		3	3	2	3	1	-	-		1		2	1	2	2

			At the end of course, students will be able to:     he basic organization and operation of the components of a digital computer sy     various arithmetic and logical operations on different types of numbers to desig and logic unit     ne performance issues of the processor and classify the control unit implementation.     reaction of the components of a digital computer sy     various arithmetic and logical operations on different types of numbers to desig and logic unit     ne performance issues of the processor and classify the control unit implementation.     various and the processor and classify the control unit implementation.     various and the processor and classify the control unit implementation.     various and standard I/O data transfer techniques, and describe the different ways of co O devices and standard I/O interfaces.     PO2   PO3   PO4   PO5   PO6   PO7   PO8   PO9   PO     2   2   1   -   <				Bloom Knowl	's Taxo edge Di	nomy  mension						
	CO1	Describe t	At the end of course, students will be able to:     De the basic organization and operation of the components of a digital components of the performance issues of the processor and classify the control unit implements.     At the performance issues of the processor and examine the virtual memory impliques.     At the different I/O data transfer techniques, and describe the different way gI/O devices and standard I/O interfaces.     At the different way gI/O devices and standard I/O interfaces.     At the different way gI/O devices digital components of the performance different way gI/O	comput	er system	l.		K1,K2/	С						
Computer	CO2	Illustrate v arithmetic	various ari and logic	thmetic a unit	nd logical	operations	s on diffe	rent types	s of num	bers to c	lesign an			K4/P,N	1
Organization and Architecture	CO3	Analyze tl techniques	Bloom's Taxonomy  Knowledge Dimension     Describe the basic organization and operation of the components of a digital computer system.   K1,K2/C     Illustrate various arithmetic and logical operations on different types of numbers to design an urithmetic and logic unit   K4/P,M     Analyze the performance issues of the processor and classify the control unit implementation echniques.   K4/C,M     Categorize the hierarchical memory system and examine the virtual memory implementation and standard I/O interfaces.   K3, K4/P,M     PO1   PO2   PO3   PO4   PO5   PO6   PO7   PO8   PO9   PO10   PO11   PO12   PS01   PS02     2   2   1   1   -   -   -   -   -   1   1     3   2   2   1   -   -   -   -   -   1   1   1     3   2   2   1   -   -   -   -   -   1   1   1     2   2   2   1   -   -   -   -   -   1   1   1   1   1   1   1	1											
Arcmutture	CO4	Categori techniqu	ze the hier es.	archical r	nemory sy	vstem and	mentatior	1	]	K3, K4/P	,М				
	CO5	Compare among I/	e the differ O devices	ent I/O da and stand	ata transfe dard I/O ir	of comm	unication	]	K2, K5/C	,M					
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		2	2	1	1	-	-	-	-	-	-	-	1	1	
CO2		3	2	2	1	-	-	-	-	-	-	-	1	1	
CO3		3	2	2	1	-	-	-	-	-	-	-	1	2	1
CO4		2	2	2	1	-	-	-	-	-	-	-	1	1	1
CO5		3	2	2	1	-	-	-	-	-	-	-	1	1	1

				At the	end of cou	ırse, stude	ents will	be able t	0:				Bloom's Taxono Knowledge DimeK3 C,PK3 C,PK3 C,PK3 C,PK4 P,MK5 C,M21212232323	nomy  nension	
	CO1	Acquire the basic integers	e Knowle c fundam	dge of L ental ma	ogical No thematica	otations w ll concept	hich is u s such as	sed to de s sets, rel	efine an ations,	d under function	stand ns, and			K3 C,P	
Discrete	CO2	Apply v	various str	ructures	and prope	erties of m	nodern al	gebra.						K3  C,P	,
& Theory of Logic	CO3	Employ problem and recu	v logical a ns by appl nrrence re	bilities s ying adv lation.	such as reavanced co	asoning to unting an	o set up 1 d compu	nathema ting tech	tical mo niques	odels fo like ger	r real life herating t	e function		K3  C,P	
	CO4	Explore	various pi	oblems in	n the field	of comput	er scienc	e using tr	ees and	graphs.				K4  P,M	[
	CO5	<b>Determ</b> recurrer	<b>ine</b> a solu ices.	ition wit	h the help	of induc	tion hype	otheses,	simple i	inductio	on proofs	and		K5  C,M	[
CO \ PO M	apping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		3	1	2	2	1	2	-	-	-	-	-	2	1	-
CO2		2	2	1	1	2	1	-	-	-	-	-	2	1	-
CO3		2	2	2	3	2	1	-	-	-	-	-	2	2	1
CO4		3	3	3	3	3	3	-	-	-	-	-	3	2	3
CO5		2	1	2	2	3	2	-	-	-	-	-	2	3	3

				At the e	nd of cour	rse, studer	nts will b	e able to	:				Bloom Knowl Dimen	's Taxor edge sion	nomy
	CO1	To disco mitigate	ver softwa such threa	are bugs tl its	hat pose c	yber securi	ity threats	and to e	xplain h	ow to fix	the bug	s to	K	1,K2/,C,I	p
	CO2	To disco mitigate	ver cyber such threa	attack sce its	enarios to	web brows	sers and w	veb serve	rs and to	explain	how to			K2/C, P	
Computer System Security	CO3	To disco exploits,	ver and ex and to exp	plain mo plain miti	bile softwa gation tecl	are bugs po hniques.	osing cyb	er securit	ty threats	s, explai	n and rec	reate		K3/C, P	
Security	CO4	To articu world wi	ilate the un ide web, an	gent need nd to expl	1 for cyber lain variou	security is threat sc	n critical enarios	computer	r system:	s, netwo	rks, and			K4/C, P	
	CO5	To articul mitigation	late the we technique	ell known es.	cyber atta	ick incider	its, explai	n the atta	ick scena	arios, an	d explain		K	5,K6/C, 1	P
CO \ PO Ma	apping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO 11	P012	PS O1	PS O2
CO1		3	1	3	2	2	2	2	3	3	2	1	3	2	1
CO2		2	3	1	3	3	2	1	3	2	2	1	3	1	2
CO3		2	2	3	2	3	2	1	3	1	3	1	3	2	3
CO4		3	2	3	3	2	3	1	3	3	2	1	3	1	2
CO5		3	2	2	3	3	1	2	3	3	2	1	3	3	1

					At the en	d of cours	se, studen	nts will be	e able to	):			Bloom's Knowle	s Taxonoi dge Dime	ny  ension
	CO1	Imple	ment vario	ous Sortin	g and Sea	rching Alg	orithms.							K3/C P	•
	CO2	Analy	ze the recu	ursive im	plementati	on of diffe	erent sorti	ng and se	earching	algorith	ms.			K4/C P	•
DSUC Lab (KCS-351)	CO3	Imple	ment vario	ous data S	tructure us	sing static	and dyna	mic mem	ory allo	cation.				K3,K4/C	Р
	CO4	Demo deletio	nstrate var on on tree	rious oper data struc	rations like cture.	e traversal,	, insertion	l						K3/C P	•
	CO5	Desig	n and Imp	lement pr	actical app	olications l	based on	graphs an	d shorte	st paths.				K5/C P	)
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		2	2	3	2	-	-	-	-	1	1	-	2		
CO2		2	2	3	2	-	-	-	-	1	1	-	2		
CO3		3	2	3	2	-	-	-	-	1	1	-	2	2	
CO4		3	3	3	2	-	-	-	-	1	1	-	2	2	2
CO5		3	3	3	2	-	-	-	-	1	1	-	3	3	2

				A	At the end	of course	, student	s will be	able to:				Bloon Knowl	n's Taxoi edge Dim	nomy  nension
	CO1	Examine	the outpu	t of the b	asic logic	gates for d	ifferent c	ombinati	ons of in	put.				K3/P	
	CO2	Design a and mult	nd simulat iplier) and	te the con code cor	nbinationa nverter.	l circuits f	or binary	arithmeti	ic ( such	as adde	rs, subtra	ctors,	]	K5/P, M	
CO Lab	CO3	Design a multiplex	nd simulat xers/demu	te combin Itiplexers	ational cir using log	rcuits for e ic gates.	ncoders/c	lecoders	and seled	ction dev	vices		]	K5/P, M	
	CO4	Design a using log	nd simulat gic gates.	te the bas	ic building	g block of	the seque	ntial circ	uits (i.e.	SR and	D Flip Fl	ops)	]	K5/P, M	
	CO5	Design an	d simulate	the 2-bit	Arithmeti	ic Logic U	nit using	logic gate	es.				]	K5/P, M	
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		2	2	2	1	-	-	-	-	1	1	-	-	-	-
CO2		3	3	3	2	-	-	-	-	1	1	-	1	-	-
CO3		2	3	3	2	-	-	-	-	1	1	-	1	1	1
CO4		2	3	3	2	-	-	-	-	1	1	-	1	2	1
CO5		2	3	3	2	-	-	-	-	1	1	-	1	2	1

				А	at the end	of course	, students	s will be	able to:				Bloom Knowle	n's Taxon edge Dim	omy  ension
	CO1	Impleme	ent various	Set opera	ations.									,K3/P	
	CO2	Design an	d demonst	rate univ	ersal logic	gates.								K3/P	
DSTL Lab	CO3	Analyze	various lo	gical exp	ressions u	sing progra	amming.							K4/P	
	CO4	Impleme	ent various	program	ming prob	lems based	d on bina	ry search						K3/P,M	
	CO5	Design a	nd Implen	nent pract	tical applic	cations bas	sed on gra	phs and s	shortest	paths.				K3, K6/P,	М
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		3	2	2	3	2	-	-	-	-	1	-	1	1	-
CO2		3	3	3	3	2	-	-	-	-	1	-	1	1	-
CO3		3	2	2	3	3	-	-	-	-	1	-	1	1	-
CO4		3	3	2	2	3	-	-	-	-	1	-	2	2	1
CO5		3	2	2	2	3	-	-	-	-	1	-	2	2	1

				At the e	end of cou	rse, stude	nts will <b>k</b>	oe able to	:				Blo Knov	om's Taxo wledge Di	onomy  mension
	CO1	Analy progra	ze and und amming so	derstand t	he real life	e problem	and apply	/ their kn	owledge	to get				K1,K2,K	4
	CO2	Engag knowl	e in the cr edge and e	eative des expertise	sign proce to meet cu	ss through stomer ne	the integed the	gration an ddress so	d applic: cial issu	ation of es.	diverse te	chnical		K2,K3	
Mini Project	CO3	Use the pre-	e various oblem	tools and	technique	s, coding J	oractices	for develo	oping rea	al life so	lution to			K2,K4/M	I
	CO4	Use the proble	e various m.	tools and	technique	s, coding p	practices	for develo	oping rea	al life so	lutions to	the		K2,K4	
	CO5	Find c	out the erro	ors in app	lication so	lutions and	d its impl	ementatio	ons					K5,K6/M	[
CO \ PO Map	ping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		3	3	3	2	2	2	2	2	3	1	2	3	3	3
CO2		3	3	3	2	3	3	2	2	3	3	2	3	3	3
CO3		3	3	3	3	3	3	2	2	3	-	-	3	3	3
CO4		3	3	2	2	3	3	2	2	3	3	-	3	1	1
CO5		3	3	2	2	3	3	2	2	3	-	-	2	2	2



## **KIET GROUP OF INSTITUTIONS, GHAZIABAD**

## **Department of Information Technology**

## **CO PO and Mapping of CO PO 3rd Year**

## (2020 – 2024 BATCH)

## Session 2022-23 Semester:- 5th

		5 <sup>th</sup> Semester
S No.	Subject Code	Subject Name
1	KCS 055	Machine Learning Techniques
2	KNC 501	Constitution of India, Law and Engineering
3	KCS 501	Database Management Systems
4	KCS 503	Design And Analysis Of Algorithm
5	KCS 054	Object Oriented System Design
6	KIT 501	Web Technologies
7	KCS 551	Database Management Systems Lab
8	KCS 553	Design and Analysis of Algorithm Lab
9	KIT 551	Web Technologies Lab
10	KCS 554	Mini Project or Internship Assessment

						Tł	neory						-		
					At the	end of co	ourse, stu	ıdents wi	ll be abl	e to:			Bl Kno	oom's Taxon owledge Dim	lomy  ension
	CO1	Unde	erstand tl	he need t	for mach	ine lear	ning for	various j	problem	solving				K2  C,	Р
	CO2	Unde	erstand a	wide va	riety of	learning	algorith	ms and l	now to s	olve con	nputing p	oroblems.		K2,K3  0	C,P
Machine Learning Techniques	CO3	Desig world	gn appro d problei	priate m ms.	achine l	earning a	algorithn	ns and a	pply the	algorith	ms to rea	ıl-		K3,K5	Р
reeninques	CO4	Unde perfo	erstand th ormance.	he neura	l nets for	r solving	real tim	e proble	ms and o	evaluatir	ng the			K5,K6	Р
	CO5	Optin achie	nize the ved by a	models malyzing	learned a g the mo	and repo dels	rt on the	expecte	d accura	cy that c	can be			K4,K5	Р
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		3	3	2	1	2	1	1	-	-	-	-	1	2	
CO2		2	3	2	2	3	2	1	-	1	-	-	2	2	1
CO3		3	3	3	3	3	2	1	-	1	-	1	2	3	2
CO4		3	3	3	3	3	2	1	-	1	-	1	2	3	2
CO5		3	3	3	3	3	2	1	-	1	-	1	2	3	2

					At the e		Bloo Know	om's Taxon /ledge Dim	iomy  ension								
	CO 1	Acqu	ire the k	nowledg	ge of dat	abase de	esign me	thodolog	gy for rea	al life ap	plicatior	ns.		K2   C			
	CO 2	Desig	gn an inf	ormatio	n model	using th	e concep	ot of ER	diagram					K6   C,P, N	I		
Database Management	CO 3	Appl	y the co	ncept of		K3   C,P											
System	CO 4	Anal	yze the r alizatior	edundar 1.		K4   C,P											
	CO 5	Ident secur	entify the broad range of database management issues including data integrity, curity and recovery in terms of transactions.											K4   C,P			
CO \ PO Maj	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
CO1		3	-	-	-	2	-	-	1	1	-	1	2	1	2		
CO2		2	1	3	2	3	-	1	1	1	2	2	2	3	2		
CO3		3	-	-	-	3	-	-	1	1	1	2	2				
CO4		2	3 - 3 1 1 2												2		
CO5		2	3	-	1		2										

				Blo Knov	om's Taxono wledge Dime	omy  ension												
	CO 1	Analy	yze runni	ng time c	of algorith	ıms using	g asympto	otic meth	ods.					K4   C,P				
	CO 2	Analy	nalyze advanced data structure algorithms to calculate their complexities K4   C,P															
Design and Analysis of Algorithm	CO 3	Creat Appro	eate solutions of Optimization problems using Dynamic Programming and Greedy K6   P, M proach.															
	CO 4	Apply	ply backtracking and branch & bound approaches for finding efficient solutions K3   P															
	CO 5	Unde Rand	Understand the concepts of NP Completeness and find alternate solutions using Randomized and Approximation Algorithms.											K2   C, P				
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			
CO1		2	3	2	2	2	-	-	-	-	-	-	2	2	2			
CO2		2	3	2	3	2	-	-	-	-	-	-	2	2	2			
CO3		2	2	3	2	2	-	-	-	1	-	-	2	2	2			
CO4		2	2 3 2 3 2 1 2 2															
CO5		2	2 1 1 1 1 1 1 1												1			

				1	At the en		Bloo Know	m's Taxo ledge Din	nomy  nension								
	CO 1	Under deskto	terstand the concepts of the web and internet and apply OOP concept in computing to create ktop based programs using Java programming language. K2, K6 /U,C,P														
Wab	CO 2	Under	stand and	l create H	ITML, D	HTML, a	and XML	docume	nts for w	eb develo	opment		K	K2, K6/U,C	C,P		
Technology	CO 3	Under using	stand and Java.	Stand and create web based programs using JavaScript and create network based programs Java. K2, K6 /U,C,P													
	CO 4	Under	erstand and analyze JDBC concepts and create the business logic using Java Beans. Erstand and apply JSP and Servlets concepts in server side scripting and create web based Il web applications using JSP and servlets K2, K4, K6/U,C,P K2, K3, K6/U,C,P														
	CO 5	Unde small															
CO \ PO Maj	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
CO1		3	3	3	3	3	1	1	1	1	1	1	3	3	3		
CO2		3	3	3	3	3	1	1	1	1	1	1	3	3	3		
CO3		3	3	3	3	3	1	1	1	1	1	1	3	3	3		
CO4		3	3	3	3	3	1	1	1	1	1	1	3	3	3		
CO5		3	3	3	3	3	1	1	1	1	1	1	3	3	3		

				At the er	nd of cou		Bloo Know	om's Taxon vledge Dim	omy  ension							
	CO 1	Under progr	rstand th amming	e applica to imple	ation dev ment app	elopmen olication.	t and ana	lyze the	insights	of object	t-oriented	1	Under	rstand(BL-	2)/C,P	
Object	Object OrientedCO 2Understand, analyze and apply the role of overall modelling concepts (i.e. System, structural).													Apply		
Oriented System			(BL-3)/C,P     arn the structured analysis / structured design and analyze the oops programming style.   Analyze (BL-4)C,P												)	
Design	CO 3	Learn													4)C,P	
	CO 4	Apply	y and evaluate the concepts of C++ for the implementation of object-oriented Evaluate (BL-5)/F,P epts.													
	CO 5	Desig	esign and evaluate the programming concepts to implement object oriented modeling in C++. Evaluate (BL-5)/P,M													
CO \ PO Maj	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
CO1		3	2	2	3	3	2	-	2	2	1	2	3	2	2	
CO2		3	3	2	3	3	3	-	2	3	2	3	3	3	3	
CO3		3	2	2	2	3	3	-	2	2	2	2	3	2	2	
CO4		3	3	3	3	3	3	-	2	3	2	3	3	2	2	
CO5		3	3	3	3	3	3	-	2	3	2	3	3	Understand(BL-2)/C,PApply (BL-3)/C,PAnalyze (BL-3)/C,PEvaluate (BL-4)C,PEvaluate (BL-5)/F,PPSO1PSO2322322322322322322322322322322322		

				At the		Bloom's Taxonomy  Knowledge Dimension										
	CO1	Discuss	iscuss the basic features and modalities about the Indian constitution. K1, K2  F,C													
Constitution	CO2	Differer level	ntiate and		K2,K3 F,C											
of India, Law and	CO3	Differer	ntiate diff		K2,K3 F,C											
Engineering	CO4	Compar	ompare different laws and regulations related to engineering practices. K1,K2,													
	CO5	Articula	iculate the role of engineers with different organizations and governance models K2,K5 F,C													
CO \ PO Maj	pping	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
CO1		-	-	-	-	-	1	1	-	-	-	-				
CO2		-	-	-	-	-	1	1	-	-	-	-				
CO3		-	-	-	-	-	2	2	1	-	-	-				
CO4		2 1 2 1 - 1 -														
CO5	1 2 1 2 2 1 2											2				

						Bloom's Ta Knowledge I	ixonomy  Dimension								
	CO 1	Under	rstand an ts.	d apply N	AYSQL/0	ORACLE	E for crea	ting table	s, views,	indexes,	sequence	es and oth	er database	K1,K2,K	3/ C, P
	CO 2	Desig payro	Design and implement a database schema for company data base, banking data base, library information system, payroll processing system, student information system. Design and implement simple and complex queries using DDL, DML, DCL and TCL. Implement PL/SQL blocks, procedure functions, packages and triggers, cursors.												/C, P
DBMS Lab	CO 3	Desig													/C, P
	CO 4	Imple													, P
	CO 5	Demo	Demonstrate entity integrity, referential integrity, key constraints, and domain constraints on database.												
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		2	2	3	2	2	2	1	1	2	1	2	2	2	2
CO2		3	3	2	2	3	1	2	1	2	2	3	3	2	2
CO3		3	2	2	2	2	2	1	1	2	1	2	2	2	2
CO4		2	2	3	2	2	2	2	1	2	2	3	2	1	1
CO5		3	3	2	2	3	1	1	1	2	1	2	3	1	1

					Bloom's Taxonomy  KnowledgeDimension										
	CO1	Imple	nplement algorithm to solve problems by iterative approach.												,K4 C,P
	CO2	Imple	mplement algorithm to solve problems by divide and conquer approach												,K4 C,P
DAA Lab	CO3	Imple	mplement algorithm to solve problems by Greedy algorithm approach.												6 P,M
	CO4	Imple	mplement algorithm to solve problems by Dynamic programming, backtracking, branch and bound approach												,K3 P, M
	CO5	Imple	nplement algorithm to solve problems by branch and bound approach K2,K3											,K3 C,P	
CO \ PO Maj	pping	Р 01	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		1	3	2	2	1	-	-	-	-	-	-	3	1	1
CO2		2	3	2	3	2	-	-	-	-	-	-	2	1	2
CO3		3	2	2	1	2	-	-	-	-	-	-	2	1	2
CO4		2 2 2 1 2 2 2										2			
CO5		2 2 2 2 1 2										2	2		

					Bloom's Taxonomy  Knowledge Dimension											
	CO1	Unders	stand and	create Ja	va progra	ams using	g method	s, librarie	es, Apple	t and AW	T.			K2,	K6/C,P	
	CO2	Unders CSS, X	derstand and create web based programs using HTML, DHTML, OHTML, S, XML.												.K6/C,P	
WT Lab	CO3	Unders	iderstand and Create JavaScript based dynamic web pages.												.K6/C,P	
	CO4	Unders	stand and	SQL query.	K2,K6/C,P											
	CO5	Unders machir	stand and ne and pro	create w	eb based m to proc	java prog luce resp	grams usi	ng Servle lient.	et & JSP	that can r	eceive da	ita sent fr	om client	K2,	K6/C,P	
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
CO1		3	3	3	2	3	1	1	1	1	1	1	3	3	3	
CO2		3	3	3	3	3	1	1	1	1	1	1	3	3	3	
CO3		3	3	3	3	3	1	1	1	1	1	1	3	3	3	
CO4		3	3	3	3	3	1	1	1	1	1	1	3	3	3	
CO5		3	3	3	3	3	1	1	1	1	1	1	3	3	3	
				At	the end	of course	e, studen	ts will be	able to:					Bloom's Knowled	Taxonomy  lge Dimension	
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	CO 1	Analyz	e and und	lerstand t	he real li	fe proble	m and ap	ply their	knowled	ge to get	programn	ning solut	ion.		K3,C,P	
	CO 2	Engage expertis	in the crose to meet	eative des t custome	sign proc er needs a	ess throu and addre	gh the in ss social	tegration issue	and appl	ication of	f diverse t	echnical	knowledge and		K4,P	
Mini Project	CO 3	Use the	various t	cools and	techniqu	es, codin	g practice	es for dev	veloping	real life s	olution to	the prob	lem	K6,M		
110jeet	CO 4 Writing and presentation skill by using report about what they are doing in mini project									K5,M						
	CO 5 Find out the errors in application solutions and its implementations										K5,M					
CO \ PO M	CO \ PO Mapping       PO1       PO2       PO3       PO4       PO5       PO6       PO7       PO8       PO9       PO10       PO11       PO12							PSO1	PSO2							
CO1		3	3	3	2	3	3	2	1	3	3	3	3	3	3	
CO2		3	3	3	2	3	3	2	1	3	3	3	3	3	3	
CO3	CO3       3       3       3       3       3       2       1       3       3       3       3				3	3										
CO4	CO4 3		3	2	2	3	3	2	1	3	3	3	3	3	3	
CO5	3	3	2	2	3	3	2	1	3	3	3	3	3	3		



## **KIET GROUP OF INSTITUTIONS, GHAZIABAD**

## **Department of Information Technology**

## **CO PO and Mapping of CO PO 4th Year**

## (2019 – 2023 BATCH)

## Session 2022-23 Semester:- 7th

	7 <sup>th</sup> Semester										
S No.	Subject Code	Subject Name									
1	KCS 078	Deep Learning									
2	KCS 071	Artificial Intelligence									
3	KHU 702	Project Management & Entrepreneurship									
4	KOE-076	Vision for Humane Society									
5	KIT 751	Artificial Intelligence Lab									
6	KIT 752	Mini Project or Internship Assessment									
7	KIT 753	Project									

Theory																	
			At	t the end	of cour	se, stude	ents will	be able	to:				Bloc Knov	om's Taxon vledge Dimo	omy  ension		
	CO1	Discus	s mather	natics be	hind fun	ctioning	of Artifi	cial neur	al netwo	ork				K3   P			
	CO2	Illustra	te differe	ent algor	ithms of	deep lea	rning for	classific	cation pr	oblem.				K4   P			
Deep Learning	CO3	Analys	e differe	nt dimen	isionality	reductio	on techni	ques for	real wor	'ld datase	et		K4   P				
	CO4	Evalua	luate different deep learning models for optimised solution of real world problems														
	CO5	To des	ign deep	learning	solution	for com	plex real	l world p	roblem ı	using ten	sor flow.		K6   P, M				
CO \ PO Mapj	ping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
CO1		3	3	2	1	3	1	-	-	-	-		2	2	1		
CO2		3	3	2	2	3	1	-	-	-	-	1	2	2	2		
CO3		3	3	3	2	3	1	-	-	1	-	1	2	2	2		
CO4		3	3	3	3	3	1	-	-	1	-	2	2	3	3		
CO5		3	3	3	3	3	1	-	-	2	-	3	3	3	3		

			At	the end	l of cour	se, stude	ents will	be able	to:				Bloo Knov	om's Taxono vledge Dime	omy  ension
	CO1	Unders	stand the	concept	of artific	cial intell	igence a	nd intell	igent age	ents.				K1,K2   C	
	CO2	Apply	basic pri	nciples o	of AI in s	olutions	that requ	uire prob	lem solv	ing meth	nods.			K3   C, P	
Artificial Intelligence	CO3	Determi	ne the ef	fectiven	ess of tru	ths by k	nowledg	e represe	ntation r	nethods	in AI.			K5   C, P	
	Abstract intelligent agents by exploring the architecture and communication of agents.											K5  C, P, M			
	CO5 Analyze various AI applications in Information retrieval and extraction, Natural Language Possessing, speech recognition and Robots.							iguage	K6   C, P, M						
CO \ PO Mapj	ping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		3	-	-	-	-	3	2	2	-	-	-	3	2	2
CO2		3	3	2	2	3	-	-	-	2	-	-	3	3	2
CO3		3	3	2	3	3	-	-	-	2	-	-	3	3	3
CO4		3	2	3	3	3	-	-	2	2	-	2	3	3	3
CO5		3	3	2	3	3	3	2	2	-	-	-	3	3	3

				At the e	nd of co	ourse, stu	dents w	ill be ab	ole to:				Bloom's Taxonomy  Knowledge Dimension			
	CO1	Unders	stand the	theories	of entre	preneursł	nip and H	Entreprei	neurial I	Developm	ent Progr	ammes		K2   C		
Project	CO2	Create	innovat	ive busin	ess ideas	s and mar	ket oppo	ortunities	5					K5   C, P, M		
Management & Entrepreneurship	CO3	Unders	stand the	e importa	nce of P	roject Ma	nageme	nt and P	roject's ]	life cycle				K2   C, P		
	CO4	Analyze Project Finance and project report											K4   C, P			
CO5 Analyze Social Sector Perspectives and Social Entrepreneurship										K2   C, P						
CO \ PO Mappin	ıg	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
CO1		1	1	1	1	-	1	1	2	2	1	3	1	1		
CO2		1	1	1	1	1	2	2	3	3	1	3	2	1		
CO3		1	1	1	1	-	3	3	2	3	1	3	2	1		
CO4		1	1	1	1	1	2	3	2	3	1	3	2	1		
CO5		1	1	1	1	1	2	3	3	2	1	3	3	1		

			At the end of course, students will be able to:										Bloom Knowl	's Taxon edge Dim	omy  ension
	CO1	<i>Unders</i> harmor	<i>tand</i> val y at indi	ue educa ividual, f	tion, bas amily, so	sic huma ociety an	n aspirati d nature/	ions and existenc	their fult e.	fillment	by learnii	ng		K2 / C,P	
	CO2 <i>Distinguish</i> between Self and Body at individual level which is coexistence of self and body to achieve harmony within.									nd		K4/ C,P			
Vision for Humane	CO3	Apply I feeling society	narmonic s in hum	ous relati an-huma	onships in interac	based on ction and	trust, res explore	spect, an their role	d other n e in ensu	aturally ring a ha	acceptab irmoniou	le s		K3/ C,P	
(KOE-076) CO4 <i>Apply</i> mutually fulfilling participation with the nature/existence.									K3/ C,P						
	CO5 <i>Evaluate</i> the ethical practices to actualize a harmonious environment wherever they work/live.									K5/ / C,P					
CO \ PO Map	ping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		1	1	1	1	1	2	2	3	2	1	2	1	1	1
CO2		1	1	1	1	1	2	2	3	2	1	2	1	1	1
CO3		1	1	1	1	1	2	2	3	3	1	2	1	1	1
CO4		1	1	1	1	1	2	2	3	3	1	2	1	1	1
CO5		1	1	1	1	1	2	2	3	3	1	3	1	1	1

	Practical															
				At the	end of o	course, s	tudents	will be a	ble to:				Blood Know	m's Taxo ledge Din	nomy  nension	
	CO1	Explor and sea	e the feat arch strat	tures of l egies of	PROLOO PROLO	G prograi G.	mming la	anguage,	includin	g basic s	syntax, se	lection,		K3   C, P		
	CO2 Demonstrate syntax, semantics, and natural deduction proof system of propositional and predicate logic						and	K3   C, P								
AI Lab	AI Lab CO3 Demonstrate the recursion and sequences using PROLOG programming.								K3   C, P							
	CO4	Demor probler	Demonstrate the PROLOG programming language skills by implementing various real-life problems.											K4   C, P		
CO \ PO Map	ping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
CO1		3	3	2	2	3	-	-	-	-	-	2	2	3	3	
CO2		3	3	2	2	3	-	-	-	-	-	2	2	3	3	
CO3	CO3			3	2	3	-	-	-	-	-	2	2	3	3	
CO4	3	3	3	2	3	-	-	-	-	-	2	2	3	3		

				At the	e end of co	ourse, stud	lents will	be able	to:				Bloom' Knowle	s Taxono edge Dime	my  ension		
	CO 1	Analyze solution.	and under	stand the	real life p	roblem and	d apply th	neir know	ledge to	get prog	gramming	<b>r</b>		K3,C,P			
	CO 2	Engage i knowled	n the creat ge and exp	tive desig pertise to	n process meet custo	through th omer needs	e integrat s and add	tion and a ress socia	pplication	on of div	verse tech	nical		K4,P			
Mini Project	CO 3	Use the v problem	arious too	ols and tee	chniques, o	coding pra	ctices for	developi	ng real l	ife solut	ion to the	;	K6,M				
	CO 4	Writing a	Vriting and presentation skill by using report about what they are doing in mini project										K5,M				
	CO 5	Find out	ind out the errors in application solutions and its implementations										K5,M				
CO \ PO Ma	apping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
CO1		3	3	3	2	3	3	2	1	3	3	3	3	3	3		
CO2		3	3	3	2	3	3	2	1	3	3	3	3	3	3		
CO3       3       3       3       3       3       3       2       1       3       3       3						3	3	3									
CO4 3 3 2				2	3	3	2	1	3	3	3	3	3	3			
CO5		3	3	2	2	3	3	2	1	3	3	3	3	3	3		

				A	t the end	l of cour	se, stud	ents will	be able	to:			Bloo Know	m's Taxonom ledge Dimens	y  ion
	CO1	Select	and <b>sum</b>	marize a	all aspect	ts of the	real life	problem	through	survey.			]	K1,K2/ C, P	
	CO2	Apply executi	acquired	knowle	dge to de	evelop w	orking n	nodel and	l plan dif	fferent pl	nases for	its		K3/ C, P	
Project (KIT-753)	CO3	Analyz	ze outcor	ne of eac	ch phase	using va	rious too	ols, techn	iques, ar	nd coding	g practice	s.		K4/ C,P	
	CO4	Justify	/defend	opinions	s, validity	y of idea	s or qual	ity of wo	ork based	l on a set	of criteri	a.		K5/ C, P	
	CO5 <b>Test</b> the working model and modify related phase accordingly. Finally integrate all phases								phases	K6/ C, P					
CO \ PO Mapping		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO 2
CO1		3	3	3	3	3	2	1	1	3	3	3	3	1	1
CO2		3	3	3	3	2	2	1	1	3	2	3	3	2	2
CO3		3	3	3	3	2	2	1	1	3	2	3	3	2	3
CO4		3	3	3	3	2	2	1	1	3	2	2	3	2	3
CO5		3	3	3	3	2	2	1	1	3	2	1	2	2	3

KIET GROUP OF INSTITUTIONS, DELHI-NCR, GHAZIABAD Department of Computer Science & Information Technology



# **Course Outcome**



# Session 2022-23(Odd Sem)

#### 13 KM STONE, GHAZIABAD-MEERUT ROAD, GHAZIABAD – 201206

Website: www.kiet.edu

KIET GROUP OF INSTITUTIONS, DELHI-NCR, GHAZIABAD

#### Department of Computer Science & Information Technology

#### Index

3 <sup>rd</sup> Semester										
S No.	Subject Code	Subject Name								
1	KCS 302	Computer Organization and Architecture								
2	KNC 301	Computer System Security								
3	KCS 303	Discrete Structures & Theory of Logic								
4	KCS 301	Data Structure								
5	KOE 034	Sensor & Instrumentation								
6	KVE 301	Universal Human Values								
7	KCS 351	DSUC Lab								
8	KCS 352	COA Lab								
9	KCS 353	DSTL Lab								
10	KCS 354	Mini Project and internship assessment								

#### 5<sup>th</sup> Semester

S No.	Subject Code	Subject Name
1	KNC 501	Constitution of India, Law and Engineering
2	KCS 501	Database Management System
3	KCS 503	Design and Analysis of Algorithm
4	KCS 055	Machine Learning Techniques (Deptt Ele-II)
5	KCS 054	Object Oriented System Design (Deptt Ele-I)
6	KIT 501	Web Technology
7	KCS 551	DBMS Lab
8	KCS 553	DAA Lab
9	KIT 551	WT Lab
10	KCS 554	Mini Project or internship assessment

	7 <sup>th</sup> Semester										
S No.	Subject Code	Subject Name									
1	KCS 077	Distributed Systems (DE IV)									
2	KCS 713	Cloud Computing(DE V)									
3	KOE-076	VISION FOR HUMAN SOCIETY									
4	KHU 702	Project Management and Entrepreneurship									
5	KIT 751	Distributed Systems Lab									
6	KIT 752	Mini Project or internship assessment									
7	KIT 753	Project									

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# **CO PO and Mapping of CO PO 2nd Year**

#### (2021-2025 BATCH)

#### Session: - 2022-23 Semester:- 3<sup>rd</sup>

S. No.	Subject	Code
1	Computer Organization and Architecture	KCS 302
2	Computer System Security	KNC 301
3	Discrete Structures & Theory of Logic	KCS 303
4	Data Structure	KCS 301
5	Sensor & Instrumentation	KOE 034
6	Universal Human Values	KVE 301
7	DSUC Lab	KCS 351
8	COA Lab	KCS 352
9	DSTL Lab	KCS 353
10	Mini Project and internship assessment	KCS 354

#### <u>Theory</u>

					At the	end of co	urse, stu	dents wil	l be able	to:					Bloom's Taxonomy  Knowledge Dimension
	CO1	Understand	and deso	cribe the	basic org	ganizatio	n and op	eration o	f the con	nponents	of a dig	ital comp	outer sy	stem	K1/C
Computer Organization and	CO2	Illustrate v logic unit.	arious ai	rithmetic	and logi	cal opera	ations on	differen	t types of	f number	s to desi	gn an ari	thmetic	and	K4/C,P
Architecture (KCS 302)	CO3	Analyze the	e perform	ance issue	es of the p	processor	and class	ify the co	ntrol unit	impleme	ntation tee	chniques			K4/C,P
	CO4       Categorize the hierarchical memory system and examine the virtual memory implementation techniques       K5         CO5       Compare the different I/O data transformation techniques       K5													K5/C,P,M	
	CO5	Compare th and standar	pare the different I/O data transfer techniques, and describe the different ways of communication among I/O devices K standard I/O interfaces												
CO \ PO Mapı	oing	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO1 2	PSO 1	PSO2
CO1         3         3         2         1         2         1         1         1         -         1								1	3	3					
CO2         3         3         3         1         3         1         -         1         -								1	1	-	-				
CO3         2         2         2         1         3         1         -         1         1         1         2											2				
CO4		2	2	2	1	1	1	-	-	1	-	1	1	3	3
CO5		2	2	2	1	1	1	-	-	1	_	1	1	2	2



					At the	end of co	ourse, sti	idents wi	ill be able	e to:					Bloom' s Taxono my  Knowl edge Dimens ion	
	CO1	Interpre	t softwa	re bugs t	hat pose	e cyber s	ecurity	threats a	and their	r mitigat	ion tech	niques.			K2,C	
Computer System	CO2	Explain	in confidentiality policies and confinement techniques to secure the system.													
Security(KNC 301)	CO3	Demonstr technique	onstrate cyber attack scenarios to web browsers and web servers and their mitigation niques.													
	CO4	Apply cr network.	yptogra	phy tech	iniques a	and diffe	erent pro	otocols f	or secur	e transfe	er of data	over th	e		K3,C, P	
	CO5	Illustrate	Internet	Security	Problem	s and Pr	otocols u	sed for s	ecure tra	nsaction.					K2,C, P	
CO \ PO Mappin	g	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1 0	PO1 1	PO 12	PSO 1	PSO2	
CO1		1	2	-	-	-	3	-	-	-	-	-	-	1	-	
CO2		2	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$													
CO3		2	2	-	-	-	1	-	-	-	-	-	-	2	-	
CO4		-	2	3	-	-	1	-	-	-	-	-	-		3	
CO5		2	1	-	-	-	2	-	-	-	-	-	-	3	-	

Dige

					At the	end of co	ourse, stu	dents wil	l be able	to:					Bloom's Taxono my  Knowle dge Dimensi on	
Discusto	CO1	Write an	argumen	t using lo	ogical no	tation an	d detern	nine if the	e argume	ent is or i	s not vali	id.			K4/ C,P	
Structures & Theory of	CO2	Understa	nd the ba	sic princ	iples of s	sets and	operation	ns in sets							K2/ C,P	
Logic(KCS-303	CO3	Demonstra	monstrate an understanding of relations and functions and be able to determine their properties.													
,	CO4	Demonst	onstrate an understanding of relations and functions and be able to determine their properties.													
	CO5	Model pro	blems in	computer	science u	using grap	ohs and tr	rees.							K6/C,P, Meta	
CO \ PO Mappin	g	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1 0	PO1 1	PO 12	PS O1	PSO2	
CO1		3     2     2     2     2     -     -     -     1     -     -										1				
CO2		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$												1		
CO3		3	2	2	2	1	-	-	-	-	-	-	1	-	1	
CO4		3	2	2	2	1	2	1	-	-	-	1	1	-	2	
CO5		3	2	2	2	1	1	1	-	-	1	1	-	-	2	

Dige

					At the o	end of co	urse, stu	dents wil	l be able	to:					Bloom's Taxono my  Knowle dge Dimensi on
	CO1	Apply th	ne knov	vledge o	of vario	us data	structu	res and	its oper	ations					K3/C,P
Data Structure(KCS	CO2	Apply st	tandard	algorit	hms for	search	ing and	sorting							K3/C,P
301)	CO3	CO3     Analyze efficiency of different algorithms using time and space complexity     K       CO4     Explore the concept, application and implementation of requiries     K													K4/C,P
	CO4	Explore	Analyze efficiency of different algorithms using time and space complexity         Explore the concept, application and implementation of recursion												
	CO5	Illustrate	e the ad	vance c	lata stru	icture w	vith resp	pect to s	olve a s	specific	probler	n			K4/C,P
CO \ PO Mappin	g	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1 0	PO1 1	PO 12	PS O1	PSO2
CO1		3	3	2	2	-	-	-	-	-	-	-	2	-	2
CO2	CO2     2     2     2     2     2     2										2				
CO3		2	3	2	3	1	-	-	-	-	-	-	2	_	2
CO4		2	1	2	1	-	-	_	-	-	-	-	1	-	1
CO5		2	1	2	1	-	-	-	-	-	-	-	2	-	2



					At the	end of co	ourse, stu	dents wil	ll be able	to:					Bloom's Taxono my  Knowle dge Dimensi on
	CO1	Apply th	e use of s	ensors fo	or measu	rement o	of displac	ement, f	orce and	pressure	:				3/ F
Sensor & Instrumentatio n(KOE 034)	CO2	Employ acceleror	commor neter, vit	nly used pration se	sensors ensor, flo	s in inc w and le	lustry fo vel.	or meas	urement	of tem	perature,	, positio	n,		4/C
	CO3	Demons	Demonstrate the use of virtual instrumentation in automation industries												
	CO4	Identify	and use	data acqu	uisition n	nethods									3/P
	CO5	Compre	hend inte	elligent i	nstrumen	tation in	industri	al autom	ation						2/M
CO \ PO Mappin	g	PO1PO2PO3PO4PO5PO6PO7PO8PO9PO1PO1POPSI011201										PSO2			
CO1	3 3 3 2 1 1 2 -									-					
CO2	3 3 3 3 2 1 2 -											-			
CO3		3	3	3	3	3	2	1	-	-	-	-	-	-	-
CO4		3	3	3	2	3	2	1	-	-	-	-	-	-	-
CO5		3	3	3	3	3	2	2	-	-	-	-	-	-	-



					At the	end of co	ourse, stu	dents wil	l be able	to:					Bloom's Taxono my  Knowle dge Dimensi on	
	CO1	Underst	and the p	rocess of	self-exp	loration	and mea	ning of n	atural ac	ceptance	·.				K2/C,P	
Universal Human Values(KVE	CO2	Explore	the conce	ept of ha	rmony in	the hum	an being	g (in Mys	elf) bein	ıg 'I' & 'l	oody' as	separate	entity		K4/C,P	
301)	CO3	Analyze	the proc	the process of developing harmony in family and society.												
	CO4	Analyze	ze the process of developing the harmony in nature and existence.													
	CO5	Apply th	ne role of	holistic	understa	nding of	harmony	of profe	essional	ethics.					K3/C,P	
CO \ PO Mappir	ng	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1 0	PO1 1	PO 12	PS O1	PSO2	
CO1		-	-	-	-	-	1	1	1	1	1	1	1	-	1	
CO2		-													-	
CO3		-	-	-	-	-	3	2	3	2	1	1	2	-	2	
CO4		-	-	-	-	-	3	2	3	2	1	1	2	-	-	
CO5		-	-	-	-	-	3	2	3	2	1	1	2	-	2	

orel

#### **Practical**

					At the	end of co	ourse, stu	idents wi	ll be able	to:					Bloom's Taxono my  Knowle dge Dimensi on	
	CO1	Interpret (time/spa	and com	pute asy	mptotic r	notations	of an al	gorithm	to analyz	the cor	sumption	n of reso	urces		K4 C,P	
DSUC Lab(KCS 351)	CO2	Exemplitusing sta	Exemplify and implement stack, queue, linked list, ADT, Binary Tree, and graph to manage the memory using static and dynamic allocations and design the application.													
	CO3	Identify, r compare t	nodel, sol he compa	ve and de rison-bas	evelop coo ed search	le for rea algorithr	l life prot ns and so	olems like rting Algo	shortest orithms.	path and I	MST usin	g graph tł	neory and	d	K3 C,P, M	
CO \ PO Mappin	g	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1 0	PO1 1	PO 12	PS O1	PSO2	
CO1		2	3	3	2	-	-	-	-	-	-	-	3	-	1	
CO2		2	3	3	2	-	-	-	-	-	-	-	3	-	2	
CO3		3	2	3	2	-	-	-	-	-	-	-	2	-	2	



					At the o	end of co	urse, stu	dents wil	l be able	to:					Bloom's Taxono my  Knowle dge Dimensi on
	CO1	Design a multiplex	nd simula kers/de-m	ate comb aultiplexe	inational ers using	circuits logic gat	for enco tes	ders/deco	oders and	l selectio	on device	S			K1/C
COA Lab(KCS 352)	CO2	CO2       Design and simulate combinational circuits for binary arithmetic (such as adders, subtractors, and multipliers ) and code converters       Image: Colored and code converters													K4/C,P
	CO3	Design an	d simulate	e the basi	c building	, blocks o	f the sequ	uential cir	cuits (i.e.	, SR and I	D FF) usi	ng logic g	ates		K4/C,P
CO \ PO Mappin	g	POSPOSPOSPOSPO6PO7PO8PO9PO1PO1POPSPS011201											PSO2		
CO1		2     1     1     2     1     2     1     1     1     1     1     1												1	
CO2		1	1	-	1	1	_	2	-	-	2	1	1	1	-
CO3		2	2	2	1	1	2	1	-	1	1	1	1	2	1

Diff

		_			At the	end of co	urse, stu	dents wil	l be able	to:					Bloom's Taxono my  Knowle dge Dimensi on
	CO1	Implemen	nt various	Set opera	tions.										K1/C
DSTL Lab (KCS 353)	CO2	CO2 Develop and compare the comparison-based search algorithms and implement practical applications based on graphs and shortest paths.													K4/C,P
	CO3	Implemer demonstra	nt various ate various	Inductive s basic M	technique aple comi	es, Recur nands.	sive Tech	niques an	d expecte	d value p	roblems u	ising Map	ole script	and	K4/C,P
CO \ PO Mappin	Ig	g PO1 PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO9 PO1 PO1 PO PS P 0 1 12 O1												PSO2	
CO1		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$													1
CO2		1	3	3	1		_	2	-	-	2	1	1	2	2
CO3		2	2	2	3	1	-	-	-	1	1	-	1	-	1



					At the d	end of co	urse, stud	lents will	l be able	to:					Bloom's Taxono my  Knowle dge Dimensi on
Mini Ducioat	CO1	Analyze	and unde	rstand th	e real life	e probler	n and ap	ply their	knowled	lge to get	t progran	nming so	olution		k1,k2,k 4
and internship assessment	CO2	Engage in and exper	ngage in the creative design process through the integration and application of diverse technical knowledge and expertise to meet customer needs and address social issues												
(KCS 354)	CO3	Use the va	arious tool	ls & techr	iques ,co	ding prac	tices for c	levelopin	g real life	e solution	to the pro	oblem			k2,k4/M
CO \ PO Mappin	g	PO1PO2PO3PO4PO5PO6PO7PO8PO9PO1PO1POPSP011201												PSO2	
CO1		3     3     3     2     2     2     2     3     1     12     01												3	
CO2		3	3	3	2	3	3	2	2	3	3	2	3	3	3
CO3		3	3	3	3	3	3	2	2	3	-	-	3	3	3

Diff

# CO PO and Mapping of CO PO 3rd Year (2020-2024 BATCH)

#### Session:- 2022-23 Semester:- 4<sup>th</sup>

S. No.	Subject	Code
1	Constitution of India, Law and Engineering	KNC 501
2	Database Management System	KCS 501
3	Design and Analysis of Algorithm	KCS 503
4	Machine Learning Techniques (Deptt Ele-II)	KCS 055
5	Object Oriented System Design (Deptt Ele-I)	KCS 054
6	Web Technology	KIT 501
7	DBMS Lab	KCS 551
8	DAA Lab	KCS 553
9	WT Lab	KIT 551
10	Mini Project or internship assessment	KCS 554

#### **Theory**

	At the end of course, students will be able to:         CO1 Identify and explore the basic features and modalities about the Indian constitution.         CO2 Differentiate and relate the functioning of Indian parliamentary system at the center and state level         CO2 Differentiate and relate the functioning of Indian parliamentary system at the center and state level         CO3 Differentiate different aspects of the Indian Legal System and its related bodies.         CO4 Discover and apply different laws and regulations related to engineering practices         CO5 Correlate role of engineers with different organizations and governance models         VPO Mapping       PO1       PO1       PO11       PO12       PS01         CO2       -       -       -       -         CO2       PO3       PO4       PO5       PO6       PO7       PO8       PO9       PO11       PO12       PS01         CO2       -       -       -       -       -       -       -       -       -       -       -														Bloom's Taxonomy Knowledge Dimension
	CO1	Identify a	and explo	re the bas	sic featur	es and mo	dalities a	bout the	Indian co	nstitution					K2   F/C
	CO2	Different	iate and 1	elate the	functioni	ng of Ind	ian parlia	mentary s	system at	the cente	r and state	e level			K4   F/P
Constitution of India, Law	stitution       CO3       Differentiate different aspects of the Indian Legal System and its related bodies.         and       Infeering       CO4       Discover and apply different laws and regulations related to engineering practices													K2   F/C	
and Engineering (KNC 501)	CO4	Discover	tiate different aspects of the Indian Legal System and its related bodies.         r and apply different laws and regulations related to engineering practices         e role of engineers with different organizations and governance models         PO2       PO3       PO4       PO5       PO6       PO7       PO8       PO9       PO10       PO11       PO12       PS01												
	CO5	Correlate													
CO \ PO Maj	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		-	-	-	-	-	3	2	-	-	-	-	-	-	-
CO2		-	-	-	-	-	3	2	-	-	-	-	-	-	-
CO3		-	-	-	-	-	3	2	1	-	-	-	-	-	-
CO4		-	-	-	-	-	3	2	2	-	2	-	-	-	-
CO5		-	-	-	-	-	2	2	2	2	2	2	2	-	-



					Att	the end o	of course,	students	s will be	able to:					Bloom's Taxonom y  Knowled ge Dimensio n	
	CO1	Under	stand kn	owledge	of datab	bases for	real life	applicat	tions.						K2/F,C	
Database Manageme	CO2	Apply	query p	rocessin	g technic	jues to a	utomate	the real	time pro	blems o	f databas	es.			K3/C,P	
(KCS 501)	CO3	Identif	tify the redundancy problem in database tables using normalization. by the concepts of transactions, their processing so they will be familiar with a broad range of database agement issues including data integrity, security and recovery.													
	CO4	Apply manag	dentify the redundancy problem in database tables using normalization. Apply the concepts of transactions, their processing so they will be familiar with a broad range of database nanagement issues including data integrity, security and recovery.													
	CO5	Exami	ne diffei	rent cond	currency	control	techniqu	es.							K4/F,C	
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
CO1		2	2	2	1	3	1	-	-	-	-	-	-	-	2	
CO2		3	3	3	1	3	1	-	-	-	-	-	-	-	3	
CO3		3	3	2	1	3	2	-	-	-	-	-	-	-	2	
CO4		3	3	3	1	3	1	-	-	-	-	-	-	-	2	
CO5		2	3	2	1	1	1	-	-	-	-	-	-	-	1	



					Att	he end o	f course,	students	will be a	ble to:					Bloom's Taxonomy Knowledge Dimension
	CO1	Anal	yze the c	omplexity	of algor	ithms and	l sorting t	technique	s concept	S					K4 / C,P
Design and Analysis of Algorithm	CO2	Unde skip	erstand th list	e concept	t of advar	nce data s	tructure s	such RB t	ree, B-Tre	ee, Binon	nial heap,	Fibonacc	i heap, Ti	ries, and	K2/ C,P
(KCS 503)	CO3	Unde greee	list erstand the basic techniques for designing algorithms, including the technique of recursion, divide & concur, ly, backtracking, and dynamic programing y the algorithm technique to solve the various problems.												K2/ C,P
	CO4	Appl	Understand the basic techniques for designing algorithms, including the technique of recursion, divide & concur greedy, backtracking, and dynamic programing Apply the algorithm technique to solve the various problems. Understand the mathematical criterion for deciding whether an algorithm is efficient & know many practically												
	CO5	Unde impo	erstand th ortant pro	e mathen blems tha	natical cri t do not a	terion for dmit any	deciding efficient	g whether algorithn	an algori 1	thm is ef	ficient & 1	know mai	ny practic	ally	K2/ C,P
CO \ PO Maj	pping	P O 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO1 1	PO1 2	PSO 1	PSO2
CO1		3	3	3	3	2	2					3	3	1	1
CO2		3	3	3	3	2	2					3	3	2	2
CO3		3	3	3	3	2	2					3	3	2	3
CO4		3	3	3	3	2	2					2	3	2	3
CO5		3	3	3	3	2	2					1	2	2	3



					At tl	ne end of	course, s	students	will be al	ble to:					Bloom's Taxonomy Knowledge Dimension
Machine Learning	CO1	Unders	stand the	need for I	Machine	Learning	for variou	us problei	n solving	5					K1, K2   C
Techniqu es (Deptt	CO2	Unders	stand a wi	de variet	y of learn	ing algor	ithms and	l how to e	evaluate n	nodels ge	nerated fr	om data			K1,K3   C,P
(KCS	CO3	Unders	stand the	latest tren	ds in Ma	chine Lea	rning								K2,K3   C,P
055)	CO4	Design	Understand the latest trends in Machine Learning Design appropriate machine learning algorithms and apply the algorithms to real-world problems												
	CO5	Optimi	ze the mo	odels lear	ned and r	eport on t	the expec	ted accurate	acy that c	an be ach	nieved by	applying	the mode	ls	K4,K5  C,P,M
CO \ PO M	apping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO1 1	PO1 2	PSO 1	PSO2
CO1		3	3	2	1	2	1	1	1	1	-	1	1	3	3
CO2		3	3	3	1	3	1	-	-	1	-	1	1	-	-
CO3		2	2	2	1	3	1	-	-	1	-	1	1	2	2
CO4		2	2	2	1	1	1	-	-	1	-	1	1	3	3
CO5		2	2	2	1	1	1	-	-	1	-	1	1	2	2

					At th	e end of	course, s	tudents v	vill be ab	ole to:					Bloom's Taxonomy  Knowledge Dimension
Object Oriented	CO1	Underst applicat	tand the a tion.	pplication	n develop	ment and	analyze	the insigh	its of obje	ect-orient	ed progra	mming to	impleme	nt	K4 P
Design (Deptt	CO2	Analyze	e the role	of overal	l modelin	ig concep	ts (i.e. Sy	vstem, stru	uctural)						K3 C
Ele-I) (KCS	CO3	Analyze		K3 P											
054)	CO3       Analyze oops concepts (i.e. abstraction, inheritance)         CO4       Understand the basic concepts of C++ to implement the object-oriented concepts														K3 C
	CO5	Apply o	bject-ori	ented app	roach to	implemer	nt real wo	rld proble	em.						K6 M
CO \ PO M	lapping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO	1	-	-	3	1	2	-	-	-	1	3	1	-	1	4
CO	2	-	3	3	2	2	-	-	-	-	-	2	-	3	2
CO	3	-	3	3	2	2	-	-	-	-	-	2	-	1	-
CO4	4	-	-	3	-	3	-	-	-	-	-	-	-	2	1
CO:	5	2	3	-	-	3	3	2	2	-	3	3	3	3	3



					At t	he end o	f course,	students	will be a	ble to:					Bloom's Taxonomy Knowledge Dimension
	CO1	Unde web a	erstand thapplication	ne basic o on and E	concept o JB.	of web d	evelopm	ent strate	egies, un	derlying	technolo	gies nee	ded to bu	uild a	2/C,P
Web Technology	CO2	Imple	ement the	e concep	ts of cor	e java an	d netwo	rking usi	ng Java.						3/C,P
(KIT 501)	CO3	Appl	y the cor	ncept of 1	narkup l	anguage	for user	interface	es.						3/C,P
	CO4	Appl	y client-s	side prog	rammin	g and ser	ver-side	program	ming				eeded to build a         1       PO12         1       PO12         -       1         -       1         1       1         1       1         1       1         1       2	3/C,P	
	CO5	Desig	ply the concept of markup language for user interfaces. ply client-side programming and server-side programming sign a basic website using HTML, CSS, Javascript, Servlet, JDBC and JSP.												
CO \ PO Ma	apping	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		2	1	1	-	-	-	-	-	-	-	-	-	1	1
CO2		2	2	1	1	-	-	-	-	-	-	-	-	1	1
CO3		3	2	2	2	1	-	-	-	-	-	-	1	1	1
CO4		3	2	2	2	1	-	-	-	-	-	-	1	1	2
CO5		3	2	2	2	2	-	-	1	-	-	-	1	2	2

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#### **Practical**

					At t	he end o	f course,	, student:	s will be	able to:					Bloom's Taxonomy   Knowledg e Dimension
DBMS	CO1	Desigr	n an info	ormation	model e	expresse	d in the t	form of a	an ER di	agram.					K6/C,P
Lab(KCS 551)	CO2	Apply	SQL qu	ieries to	impleme	ent and r	nanipula	te the da	itabase a	and prov	ide diffe	rent const	raints.		K3/C,P
	CO3	Apply SQL queries to implement and manipulate the database and provide different constraints.         Apply structured query language to automate the real time problems of databases.												K3/C,P	
CO \ PO Maj	oping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		2	1	3	2	3	-	-	-	-	-	1	-	-	2
CO2		2	1	3	2	3	-	-	-	-	-	1	-	-	2
CO3		3	2	2	-	3	-	-	-	-	-	1	-	-	1



					Att	he end o	f course,	students	will be a	ble to:					Bloom's Taxonomy Knowledge Dimension
DAA Lab	CO1	Under	stand bas	ic technic	ues for d	esigning	algorithn	ns, includ	ing the te	chniques	of recursi	on and ite	erative ap	proach.	K2/ C,P
(KCS 553)	CO2	Apply algorithms to solve real world problems using various algorithm design strategies.													
	CO3	Analy	ze the per	formance	e of algor	ithms wit	h respect	to time a	nd space	complexi	ty.				K4/ C,P
CO \ PO Ma	pping	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO1 1	PO1 2	PSO 1	PSO2
CO1		3	2	2	2	2	2	-	-	-	-	2	2	1	1
CO2		3	2	2	2	2	2	-	-	-	-	2	2	2	2
CO3		3	2	2	2	2	2	-	-	-	-	2	2	2	2

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					At the	e end of co	urse, sti	udent	s will be :	able to:					Bloom's Taxono my  Knowle dge Dimensi on	
	CO1	Develop server sid	static wel le prograi	o pages usi nming JSI	ing HTML	, dynamic	web pa	ges us	sing Javas	cript and	XML, an	d dynami	ic web page	e using	K3/C,P	
WT Lab (KIT 551)	CO2	Develop.	ver side programming JSP. velop Java programs for window/web-based applications.													
	CO3	Design se	Develop Java programs for window/web-based applications. Design server side applications using JDBC, ODBC and section tracking API													
CO \ PO M	apping	PO1	PO2	PO3	PO4	PO5	PO 6	P O 7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
CO1		3	2	1	1	1	-	-	-	-	-		1	1	2	
CO2		3	2	1	1	1	-	-	-	-	-		1	1	2	
CO3		3	2	2	2	2	-	-	-	-	-		2	2	2	

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					At t	he end o	f course,	students	will be a	ible to:					Bloom's Taxonomy  Knowledge Dimension
	CO1	Ana	alyze and	l underst	and the 1	real life p	problem	and appl	y their k	nowledg	e to get p	orogramr	ning solu	ition.	K4 F,P
Mini Project or internship	CO2	CO2 Engage in the creative design process through the integration and application of diverse technical knowledge and expertise to meet customer needs and address social issues.												K2,K3 C,P	
assessment (KCS 554)	CO3	Use	the vario	ous tools &	& techniq	ues ,codi	ng practio	ces for de	veloping	real life	solution to	o the prob	olem.		K4 C,P
CO \ PO Maj	oping	P 0 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO1 1	PO1 2	PSO 1	PSO2
CO1		3	3	3	2	2	2	2	2	3	1	2	3	3	3
CO2		3	3	3	2	3	3	2	2	3	3	2	3	3	3
CO3		3	3	3	3	3	3	2	2	3	-	-	3	3	3

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# CO PO and Mapping of CO PO 4<sup>th</sup> Year

#### (2019-2023 BATCH)

#### Session:- 2022-23 Semester:- 8th

S. No.	Subject	Code
1	Distributed Systems (DE IV)	KCS 077
2	Cloud Computing(DE V)	KCS 713
3	VISION FOR HUMAN SOCIETY	KOE-076
4	Project Management and Entrepreneurship	KHU 702
5	Distributed Systems Lab	KIT 751
6	Mini Project or internship assessment	KIT 752
7	Project	KIT 753

#### **Theory**

						At the	end of co	ourse, stu	dents wi	ll be able	e to:				Bloom's Taxonomy  Knowledge Dimension
Distributed	CO1	Apply th	e knowle	dge to ga	in insight	of Distri	buted Sys	stem in so	olving rea	l world p	roblems.				K3 C,P
Systems (KCS 077)	CO2	Evaluate security,	knowled and distri	ge in dist ibuted file	ributed an e systems	chitectur	e, naming	g, synchro	onization,	consister	ncy and re	eplication	ı, fault tol	erance,	K2 C,P
	CO3	Analyze	the current	nt popula	r distribu	ted syster	ns such a	s peer-to-	peer (P2I	P) system	s will also	o be analy	yzed.		K4 C,P
	CO4	Illustrate	the conc	ept of fail	lure recov	ery in Di	Interpretent of the second s		K3 C,P						
	CO5	Explore	the know	ledge of S	Synchroni	ization an	d Deadlo	ck.							K4 C,P
CO \ PO Mapping		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		3	2	3	-	-	-	-	-	-	-	-	2	2	1
CO2		3	3	3	2	-	-	-	-	-	-	-	3	2	-
CO3		2	3	3	2	-	-	-	-	-	-	-	2	-	-
CO4		2	3	2	-	-	-	-	-	-	-	-	2	1	-
CO5		2	2	2	-	-	-	-	-	-	-	-	1	-	-

Di
		At the end of course, students will be able to:													
Cloud	CO1	Descri	be archite	ecture and	d underly	ing princi	ples of cl	loud com	outing.						K3/ C,P
Computing	CO2	Explai	n the nee	d, types a	and tools	of Virtual	ization fo	or cloud.							K4/ C,P
(KCS /13)	CO3	Descri	be Servic	es Orient	ed Archit	tecture an	d various	types of	cloud ser	vices.					K3/ C,P
	CO4 Explain Inter cloud resources management cloud storage services and their providers Assess security services and standards for cloud computing.												K4/ C,P		
	CO5	Analyze advanced cloud technologies.													
CO \ PO Mapping		PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		-	1	-	-	-	2	-	-	-	-	-	-	1	-
CO2		1	3	2	-	1	2	-	-	-	-	-	-	2	-
CO3	2 2 1 - 2 2 - 2												-		
CO4	2 2 2 1 2 3 2 -												-		
CO5		-	-	3	3	-	3	-	-	-	-	-	-	2	1



VISION					P	At the en	d of coui	rse, stud	ents will	be able t	0:				Bloom's Taxonomy  Knowledge Dimension	
FOR	CO1	Analyze	the hum	an aspira	ations, its	s fulfilme	ent and n	eed of u	niversal h	numan o	rder.				K4 C,P	
HUMAN SOCIETY (KOE-076 )	CO2	Analyz	e the typ	es of Hu	man-Hur	nan relat	ionship 8	& its fulfi	llment.						K4 C,P	
	CO3	Analyz	Analyze justice from family to world family order.													
	CO4	Analyz	Analyze the conceptual framework of undivided society as well as universal human order.													
	CO5	Analyze the transition from current state to the undivided society and universal human order.														
CO \ PO Mapping		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
CO1		-	-	-	-	3	-	1	3	-	1	3	3	-	1	
CO2	CO2 1 1									1						
CO3		-	-	-	-	3	-	1	3	-	1	3	3	-	1	
CO4		-	-	-	2	3	-	1	3	-	1	3	3	-	1	
CO5		-	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$												1	



<b>D</b>			At the end of course, students will be able to:													
Project Managemen	CO1	Underst	and the	theories	of entre	preneurs	hip and	Entrepre	eneurial 1	Develop	ment Pro	ogramme	es.		K3/ C,P	
Entrepreneu rship	CO2	Analyze	e innovat	tive busi	ness ide	as and m	narket op	portunit	ies						K3/ C,P	
(KHU 702)	CO3	Underst	Inderstand the importance of Project Management and Project's life cycle													
,	CO4 Analyze Project Finance and project report.												K3/ C,P			
	CO5	Evaluat	aluate Social Sector Perspectives and Social Entrepreneurship.													
CO \ PO Mapping		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
CO1		-	-	-	-	-	1	1	2	2	-	-	1	-	-	
CO2		-	-	-	-	-	2	2	3	3	2	3	2	-	-	
CO3		-														
CO4		2 3 2 3 3 2 -												-		
CO5		-	-	-	-	-	2	3	3	2	2	3	3	-	-	



### **Practical**

Distribut ed Systems						At the en	ıd of cou	rse, stud	lents will	be able	to:				Bloom's Taxonomy Knowledge Dimension
Lab	CO1	Imple	ement the	e functio	oning of	Lamport	t's Logic	al Clock	K						3K/C,P
(KIT 751)	CO2	Imple	Implement the Distributed Mutual Exclusion in 'C'												
	CO3	Imple	Implement Non-Token based Algorithms using 'C'												
CO \ PO Mapping		PO 1	PO         PO2         PO3         PO4         PO5         PO6         PO7         PO8         PO9         PO10         PO1         PO1         PS           1         PO2         PO3         PO4         PO5         PO6         PO7         PO8         PO9         PO10         1         2         O1										PSO2		
CO1 2 - 3 2 1 1									-						
CO2		2	3	3	2	1	-	-	-	-	-	1	-	2	-
CO3 - 3 3 3 1 2 3 3											1				



Mini Project or internship assessment					1	At the en	nd of cou	rse, stud	ents will	be able	to:				Bloom's Taxonom y  Knowledg e Dimensio n	
(KIT	CO1	Analyz	Analyze and understand the real life problem and apply their knowledge to get programming solution													
752)	CO2	Engage in the creative design process through the integration and application of diverse technical knowledge and expertise to meet customer needs and address social issues													K3 C,P	
	CO3	Use the various tools & techniques ,coding practices for developing real life solution to the problem												K4 C,P		
CO \ PO Mapping		PO1         PO2         PO3         PO4         PO5         PO6         PO7         PO8         PO9         PO10         PO1 1         PO1 2         PS0 1										PSO2				
CO1		3	3	3	2	2	2	2	2	3	1	2	3	3	3	
CO2		3	3	3	2	3	3	2	2	3	3	2	3	3	3	
CO3 3 3 3 3 3 3 2 2 3 3 3								3								

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					A	At the end	d of cour	rse, stude	ents will	be able t	0:				Bloom's Taxonomy  Knowledge Dimension	
	CO1	Analyz sources	e probler S.	ns creativ	vely throu	igh susta	ined criti	cal invest	tigation b	y integra	ting info	mation	from mu	ıltiple	K1,K2/ C, P	
Project (KIT	CO2	Apply	fundameı	ntal, disci	plinary c	oncepts a	and metho	ods in wa	ays appro	priate to	their prin	cipal ar	eas of stu	ıdy.	K3/ C, P	
753)	CO3	Demon profess	Demonstrate skill and knowledge of current information, technological tools and techniques specific to the professional field of study, using effective oral, written and visual communication													
	CO4	Evalua	Evaluate opinions, validity of ideas or quality of work based on a set of criteria.													
	CO5	Test the working model and modify related phases accordingly. Finally integrate all phases												K6/ C, P		
CO \ PO Mapping		PO1	PO1 PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO9 PO10 PO PO 11 12 PSO1											PSO2		
CO1	CO1       3       3       3       3       2       1       1       3       3       3       1								1							
CO2		3	3	3	3	2	2	1	1	3	2	3	3	2	2	
CO3		3	3	3	3	2	2	1	1	3	2	3	3	2	3	
CO4		3	3	3	3	2	2	1	1	3	2	2	3	2	3	
CO5		3     3     3     2     2     1     1     3     2     1     2     2									3					

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KIET GROUP OF INSTITUTIONS, DELHI-NCR, GHAZIABAD



Department of Computer Science & Information Technology

# **Course Outcome**



# Session 2022-23(Even Sem)

#### 13 KM STONE, GHAZIABAD-MEERUT ROAD, GHAZIABAD – 201206

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#### KIET GROUP OF INSTITUTIONS, DELHI-NCR, GHAZIABAD

### **Department of Computer Science & Information Technology**

# Index

	4th												
	Semester												
S	Subject	Subject											
No.	Code	Name											
1	KAS 402	Maths IV											
2	KNC 301	Technical Communication											
3	KCS 401	Operating System											
4	KCS 402	Theory of Automata and Formal Languages											
5	KCS 403	Microprocessor											
6	KCS 451	Operating System Lab											
7	KCS 452	Microprocessor Lab											
8	KCS 453	Python Language Programming Lab											
9	KNC 402	Python Programming											

6<sup>th</sup>

## Semester

S	Subject	Subject
No.	Code	Name
1	KCS601	Software Engineering
2	KIT601	Data Analytics
3	KCS603	Computer Networks
4	KCS-061	Big Data
5	KIT -062	Blockchain Architecture Design
6	KOE-068	Software Project Management
7	KCS651	Software Engineering Lab
8	KIT651	Data Analytics Lab
9	KCS653	Computer Networks Lab
10	KNC602	Indian Tradition, Culture and Society

8 <sup>th</sup>													
	Semester												
S	Subject	Subject											
No.	Code	Name											
1	KHU801	HSMC-2 ( RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING)											
2	KOE-085	Open Elective-III ( Quality Management )											
3	KOE-097	Open Elective-IV ( BIG DATA )											
4	KIT851	Project											

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# CO PO and Mapping of CO PO 2nd Year (2021-2025 BATCH)

## Session: - 2022-23 Semester:- 4<sup>th</sup>

S. No.	Subjects	Code
1	Maths IV	KAS 402
2	Technical Communication	KAS 301
3	Operating System	KCS 401
4	Theory of Automata and Formal Languages	KCS 402
5	Microprocessor	KCS 403
6	Python Programming	KNC 402
7	Operating System Lab	KCS 451
8	Microprocessor Lab	KCS 452
9	Python Language Programming Lab	KCS 453

# **Theory**

Microprocessor (KCS 403)					At t	he end	of cou	rse, stu	dents w	vill be a	ble to:				Bloom's Taxonomy  Knowledge Dimension
	CO1	Recall b	oasic co	oncept	t of di	gital o	compi	iter to	Micro	oproce	essor b	ased sy	stems		K2/C,P
	CO2	Identify	detail	ed s/w	√ & h/•	w stru	icture	of 808	85/808	36 Mio	eropro	cessor.			K2/C,P
	CO3	Examin 8085/80	e and s 186 pro	solve h grami	nardw ming (	are ar techni	nd sof iques.	tware	proble	ems af	ter stu	dying t	he instruct	ion set of	K3/C,P
	CO4	Analyze techniqu	e softw ues.	are pr	oblem	ns afte	er stuc	lying t	he ins	tructio	on set	of 8085	and prog	ramming	K4/C,P
	CO5	Illustrat practice 8259A	Illustrate 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.												
CO \ PO Maj	oping	Р О 1	P O 2	Р О 3	P O 4	Р О 5	P 0 6	P O 7	Р О 8	P 0 9	P O 10	РО 11	PO12	PSO1	PSO2
CO 1		2	1	1	-	2	-	1	1	1	1	1	2	1	1
CO 2	2 1 2 1 2 - 1 1 1 1 1 1 1									1	1				
CO 3	3     1     1     -     3     -     -     1     1     2     1     1     -									1					
CO 4		2	2	1	1	1	-	-	1	-	1	1	1	-	2
CO 5     2     3     1     1     -     1     -     1     1     -									2						

Diff

Technical communication (KAS 401)		At the end of course, students will be able to: Bloom Taxonomy (K1=Remember, K2=Understand, K3=Apply, K4=Analyze, K5=Evaluate, K6=Create)													
	CO 1	B A 1						$\frac{1}{1}$	$\frac{1}{2}$	Anaryze, K			eate)	1 1	on
		Analy as Eng	ze the	e naturo rs.	e and o	bjectiv	e of Teo	chnical	Comm	iunicati	on rele	evant fo	or the wo	orkplace	K4/C,P
	CO 2	Analy as Eng	ze the	e naturo rs.	e and o	bjectiv	e of Teo	chnical	Comm	unicati	ion rele	evant fo	or the wo	orkplace	K3/C,P
	CO 3	<ul> <li><sup>3</sup> Imbibe presentation strategies inputs by presentation skills to enhance confidence in facing diverse audiences in required situations at the workplace.</li> <li>A nalyze the application of the technical communication to promote their competence for</li> </ul>													
	CO 4	Analyze the application of the technical communication to promote their competence for various media like Report generation, Resume design, GD and Interview etc.													
	CO 5	Evalu efficie	ate vo ent co	oice-dy mmuni	namics cators.	and se	elect ap	propria	te cues	for the	ir own	efficac	ey as flue	ent &	K5/C,P
CO \ PO Map	ping	P 0 1	P O 2	PO 3	РО 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	РО 11	PO1 2	PSO1	PSO2
CO 1		-	-	-	-	-	-	-	-	2	3	-	3	-	-
CO 2													-		
CO 3												-			
CO 4		-	-	-	-	-	-	-	-	2	3	-	3	-	-
CO 5		2 3 - 3 -												-	

del

Python Programming(K NC 402)		I	Bloom Taxo	nomy (K1	At the e	end of co er, K2=Uno	<b>urse, stu</b>	<b>dents wil</b> 3=Apply, F	<b>l be able</b> X4=Analyz	<b>to:</b> e, K5=Eva	luate, K6=(	Create)			Bloom's Taxono my  Knowle dge Dimensi on	
	CO1	Assess	the fund	lamenta	ls of Py	thon p	rograms	5.							Р	
	CO2	Examir	ne pytho	n progr	ams wit	th cond	itionals	and loc	ops.						K4/C,P	
	CO3	Demon	onstrate Python functions and to use Python data structures lists, tuples, dictionaries													
	CO4	Implem	nstrate Python functions and to use Python data structures lists, tuples, dictionaries													
	CO5	Perforn	n the op	erations	s of sear	ching,	sorting	and me	rging ir	Pythor	1	_	-		K3/C,P	
CO \ PO Mappin	g	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1 0	PO1 1	PO 12	PS O1	PSO2	
CO1		3	1	-	2	3	3	-	-	-	1	2	3	-	1	
CO2		2	2	2	2	2	-	-	-	-	1	2	3	-	1	
CO3		3	2	2	3	-	-	-	-	-	-	2	3	-	2	
CO4		1	3	2	1	2	-	-	-	-	-	1	2	-	2	
CO5		3	2	2	1	3	2	-	-	-	-	-	2	-	2	

Diff

Theory of Automata and Formal					At the o	end of co	urse, stu	dents will	l be able	to:					Bloom's Taxono my  Knowle	
Languages, (KCS 402)		E	Bloom Taxo	nomy (K1	=Remembe	er, K2=Unc	lerstand, K	3=Apply, F	K4=Analyz	e, K5=Eval	luate, K6=0	Create)			dge Dimensi on	
	CO1	Unders	tand ba	sic conc	cepts of	automa	ata theo	ry and f	formal l	anguag	es.				K2/F,C, P	
	CO2	Constru	uct finit	e autom	ata and	regula	r expres	sions fo	or regul	ar langı	lages.				K3/C,P	
	CO3	Constru	uct regu	lar and	context	free gr	ammars	s for for	mal lar	iguages					K3/C,P	
	CO4	Constru	nstruct the pushdown automata for context free languages.													
	CO5	Constru	struct the pushdown automata for context free languages.													
CO \ PO Mappin	g	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1 0	PO1 1	PO 12	PS O1	PSO2	
CO1		2	-	-	-	-	-	-	-	-	-	1	1	-	-	
CO2		3	2	2	-	-	-	-	-	-	-	1	2	-	2	
CO3		3	2	2	-	-	-	-	-	-	-	1	2	-	2	
CO4		3	2	2	-	-	-	-	-	-	-	1	2	-	2	
CO5		3	2	2	-	-	-	-	-	_	-	1	2	-	2	



Operating System (KCS401)					At the e	end of co	urse, stu	lents will	be able t	to:					Bloom's Taxono my  Knowle dge	
		E	Bloom Taxo	nomy (K1	=Remembe	er, K2=Und	lerstand, K	3=Apply, k	K4=Analyz	e, K5=Eval	luate, K6=0	Create)			Dimensi on	
	CO1	Underst	and the	structu	re, func	tions ar	nd types	of OS.							K2/F,C	
	CO2	Illustrat	e the pr	inciples	of con	currenc	y, Dead	locks a	nd sync	hroniza	tion pro	oblem i	n proce	ess.	K3/C,P	
	CO3	Explore	ore about Processes, Threads, and various CPU scheduling algorithms.													
	CO4	Compar	pre about Processes, Threads, and various CPU scheduling algorithms.													
	CO5	Illustrat	e variou	is I/O m	anagen	nent and	d File S	ystems.							K3/C,P	
CO \ PO Mappin	g	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1 0	PO1 1	PO 12	PS O1	PSO2	
CO1		2	2	2	-	-	-	-	-	-	-	-	3	-	2	
CO2		2	2	3	3	-	-	-	-	-	-	-	2	-	2	
CO3		2	3	3	-	-	-	-	-	-	-	1	2	-	2	
CO4		2	2	2	2	-	-	-	-	-	-	1	1	-	2	
CO5		3	2	-	1	-	1	-	-	-	-	1	2	-	2	



### **Practical**

Microprocessor Lab(KCS 452)				ł	At the er	nd of cou	ırse, stu	dents w	vill be ab	le to:					Bloom's Taxonomy  Knowledge Dimension
	CO1	Compu	te arithn	netic op	eration	ns using	g 8085	assen	nbly lar	iguage					K5/C,P
	CO2	Compu	te search	ning, an	d sorti	ng usin	ng 808:	5 assei	mbly la	nguage	•				K5/C,P
	CO3	Compu	bute complement, and ASCII conversion of numbers using 8085 assembly langua											age	K5/C,P
CO \ PO Mappin	g	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO1 2	P S O 1	PSO2
CO1		2	2	1	-	2	-	-	1	1	1	1	2		1
CO2		2	2	1	-	1	_	-	1	1	2	1	2		1
CO3		2	2	1	-	1	-	-	1	1	1	1	1		1



Python Language Programming Lab(KCS 453)					At the o	end of co	urse, stu	dents will	l be able	to:					Bloom's Taxono my  Knowle dge Dimensi on		
	CO1	Implem	ent basi	c synta:	x of pyt	hon im	plemen	tation, l	ooping	and cor	nditiona	l statem	nents		K3/C,P		
	CO2	Develop	o progra	grams related to data structure list, tuples, dictionary and set.													
	CO3	Apply s	earchin	g ,sortir	ng and r	nerging	technio	ques in	Python						K3/C,P		
CO \ PO Mappin	g	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1 0	PO1 1	PO 12	PS O1	PSO2		
CO1		3	1	-	2	3	3	-	-	_	1	2	3	_	1		
CO2		3	2	2	3	-	-	-	-	-	-	2	3	-	2		
CO3		3	2	2	1	3	2	_	_	_	_	_	2	-	2		



Operating System Lab(KCS 451)					At the o	end of co	urse, stu	dents wil	l be able	to:					Bloom's Taxono my  Knowle dge Dimensi on		
	CO1	Apply k	nowled	ge of ba	asic UN	IIX Sys	tem cal	ls to so	lve vari	ous sofi	tware pr	roblems	5.		K3/C,P,		
	CO2	Examin	e variou	rious process synchronization problems and memory management technique													
	CO3	Comparal algorith	re the pe ms.	erforma	nce of v	arious	CPU sc	hedulir	ng algor	rithms a	nd page	replace	ement		K5/C,P		
CO \ PO Mappin	g	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1 0	PO1 1	PO 12	PS O1	PSO2		
CO1		2	1	1	1	-	-	-	-	-	-	-	1	-	1		
CO2		2	2	2	1	-	-	-	-	-	-	-	-	-	2		
CO3		2	2	3	2	-	-	-	-	-	-	-	-	-	2		



# CO PO and Mapping of CO PO 3rd Year (2020-2024 BATCH)

Session:- 2022-23 Semester:- 6<sup>th</sup>

S. No.	Subjects	Code
1	Software Engineering	KCS601
2	Data Analytics	KIT601
3	Computer Networks	KCS603
4	Big Data	KCS-061
5	Blockchain Architecture Design	KIT -062
6	Software Project Management	KOE068
7	Indian Tradition, Culture and Society	KNC602
8	Software Engineering Lab	KCS651
9	Data Analytics Lab	KIT651
10	Computer Networks Lab	KCS653

#### **Theory**

Software Engineering (KCS601)					At	the end	of course	e, student	ts will be	able to:					Bloom's Taxonomy   Knowledg e	
			Bloom	Taxonomy	(K1=Rer	nember, K2	2=Understa	and, K3=A	pply, K4=A	Analyze, K	5=Evaluate	e, K6=Crea	te)		Dimension	
	CO1	Exp	lain var	ious so	ftware	characte	eristics	and dif	ferent ty	ypes of	softwa	e devel	opment	models.	K2/C	
	CO2	Prep	are the	conten	ts of SF	RS and o	ensure	basic so	oftware	quality	assurar	ice prac	tices.		K3/P	
	CO3	App	ly vario	ous met	hods fo	r softwa	are desi	ign tech	niques.						K3/P	
	CO4	Illus	strate va	various methods for software design techniques. te various software testing techniques.												
	CO5	Exa	mine va	rious s	oftware	mainte	enance a	and pro	ject ma	nageme	ent tech	niques.			K3/P	
CO \ PO Ma	apping	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
CO1		2	2	1	2	-	-	-	-	-	-	1	-	-	1	
CO2		2	2	1	2	-	-	-	-	-	-	1	-	-	1	
CO3		2	2	2	2	-	-	-	-	-	-	1	-	-	1	
CO4		2	2	2	2	-	-	-	-	-	-	1	-	-	1	
CO5		2	2	2	2	-	-	-	-	-	-	1	-	-	1	



Data Analytics(K IT601)					At tl	he end o	f course,	students	will be a	able to:					Bloom's Taxonomy  Knowledg e		
			Bloom Ta	axonomy (	(K1=Reme	mber, K2=	Understan	d, K3=App	oly, K4=A	nalyze, K5	=Evaluate,	K6=Create	)		Dimension		
	CO1	Discu	iss vari	ous con	cepts o	f data a	nalytic	s pipeli	ne						K2/C,P		
	CO2	Apply	y classi	fication	and re	gressio	n techn	iques							K3/C,P		
	CO3	Unde	rstand	mining	techniq	ues on	stream	ing data	a						K2/C,P		
	CO4	Comp	pare dif	ferent c	elusterir	ng and	frequen	t patter	n mini	ng algo	rithms				K4/C,P		
	CO5	Analy	ze the	are different clustering and frequent pattern mining algorithms ze the concept of analytics using R language and different analytical tools													
CO \ PO Mar	oping	PO1	PO2	PO2 PO3 PO4 PO5 PO6 PO7 PO8 PO9 PO10 PO11 PO12 PS													
CO1		2	2	2	-	-	-	-	-	-	-	-	-	-	-		
CO2		2	3	3	2	2	-	-	-	-	-	1	-	-	2		
CO3		2	2	3	2	3	-	-	-	-	-	1	-	-	1		
CO4		2	3	2	3	2	-	-	-	-	-	_	-	-	1		

CO5	2	3	3	3	2	-	-	-	2	-	1	-	-	2

Dige

					At t	he end of	f course,	students	will be a	ble to:						
Computer Networks( KCS603)			Bloom T	axonomy	(K1=Reme	ember, K2=	-Understan	ld, K3=Apr	oly, K4=Ar	nalyze, K5=	=Evaluate, 1	K6=Create	)		Bloom's Taxonomy  Knowledge Dimension	
	CO1	Unde	erstanc	l how th	ne data	is trans	mitted	from po	oint-to-p	point ar	nd the st	ructure	of netw	vorks	K2/C,P	
	CO2	Anal proto	ysis of cols.	f differe	ent med	ium acc	cess coi	ntrol pro	otocols	and sur	nmarize	e data li	nk laye	r	K4/C,P	
	CO3	Appl	ly the	concep	t of rou	ting and	d IP ade	dressing	g in netv	work la	yer				K3/C,P	
	CO4	Expl funct	ain tra tionali	n transport layer, session layer and presentation layer of OSI model and its malities												
	CO5	Eval	uate th	e role c	of proto	cols and	d email	ing serv	vice and	l applic	ation la	yer serv	vices		K5/C,P	
CO \ PO Mar	oping	PO 1	PO 2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO1 1	PO1 2	PSO 1	PSO2	
CO1		3	2	2	-	-	-	-	-	-		2	3	1	3	
CO2		2	1	1	-	-	-	-	-	-	-	1	3	1	2	
CO3		3	3	2	2	-	-	-	-	-	2	3	3	2	2	

CO4	3	3	2	_	-		-	-	-	2	2	3	1	3
CO5	2	1	2	-	-	2	-	-	-	2	2	3	2	3



Big Data(KC S-061)			Bloom Ta	xonomy (	At th	ne end of	<b>course, s</b> Understanc	tudents	will be at	ole to: alvze, K5=	Evaluate, K	6=Create)			Bloom's Taxonomy  Knowledge Dimension	
	CO1	Discu	ss knov	vledge o	of Big I	Data An	alytics	concep	ts and i	ts appli	ications	in busi	ness.		K2/F,C	
	CO2	Demo	nstrate	functio	ns and	compor	nents of	Map R	educe ]	Framev	vork and	I HDFS	<b>b</b> .		K3/P	
	CO3	Discus	viscuss Data Management concepts in NoSQL environment.													
	CO4	Explai	xplain process of developing Map Reduce based distributed processing applications.													
	CO5	Expla	in proce	ess of d	evelopi	ng appl	lication	s using	HBAS	E, Hive	e, Pig etc	2.			K4/P	
CO \ PO M	apping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO1 1	PO1 2	PSO 1	PSO2	
CO1		2	1	1	2	2	1	-	-	-	-	-	-	-	1	
CO2		2	1	2	2	3	2	-	-	-	-	-	-	-	2	
CO3		2	2 2 2 1 3 2													
CO4		2	2 2 2 2 3 1													
CO5		2	2	2	1	2	1	-	-	-	-	-	-	-	1	



Blockchain		At the end of course, students will be able to:														
Design															Taxonomy  Knowledge	
(KIT -062)		]	Bloom Taxonomy (K1=Remember, K2=Understand, K3=Apply, K4=Analyze, K5=Evaluate, K6=Create)													
	CO1	Desc	Describe the basic understanding of Blockchain Architecture along with its primitives.													
	CO2	Expla	ain the	require	ments fo	r basic p	rotocol a	llong wit	h scalabi	ility aspe	ects.				K2, K3/C,P	
	CO3	Desig	Design and deploy the consensus process using frontend and backend.													
	CO4	Apply	Apply Blockchain techniques for different use cases like Finance and Trade/Supply.													
	CO5	Appl	Apply Blockchain techniques for different use cases of Government activities.													
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
CO1		3	1	-	2	3	3	-	-	-	1	2	3	-	1	
CO2		2	2	2	2	2	-	-	-	-	1	2	3	-	1	
CO3														2		
CO4														2		
CO5		3	2	2	1	3	2	_	-	-	_	-	2	-	2	



Software Project		At the end of course, students will be able to:													
Managemen															Taxonomy  Knowledge
t (KOE-068)		]	Bloom Ta	axonomy	(K1=Rem	ember, K2	=Understa	nd, K3=Ap	ply, K4=A	nalyze, K5	=Evaluate,	K6=Creat	e)		Dimension
	CO1	Exerc	cise th	e proje	ect plan	ning ac	tivities	and the	e key ph	nases of	f project	manag	gement.		K3/ P
	CO2	Apply different software process models and cost estimation models for development of a project													
	CO3	Explo	Explore various project activities to compute critical paths for risk analysis.         Identify the different project contexts and suggest an appropriate management strategy												
	CO4	Ident													
	CO5	Adapt professional ethics in staff selection and professional concern in team building for successful software development													
CO \ PO Ma	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		3	3	2	1	-	2	-	-	2	3	2	2	-	2
CO2		2	3	-	-	2	2	-	-	2	-	3	2	-	2
CO3		3	3	3	3	3	2	-	-	2	2	2	3	-	2
CO4	4         2         2         -         2         2         2         -         -         2         2         2         2         -         -         1         2         2         2         2         -         -         1         2         2         2         2         -         -         1         2         2         2         2         -         -         1         2         2         2         2         -         -         1         2         2         2         2         -         -         1         2         2         2         2         -         -         1         2         2         2         2         2         -         -         1         2         2         2         2         2         -         -         1         2         2         2         2         2         -         -         1         2												2		
CO5		1	-	-	-	-	3	2	3	3	3	2	2	-	2

DER

Indian Trac Culture and Society(K)	dition, d NC602)	At the end of course, students will be able to:       7         Bloom Taxonomy (K1=Remember, K2=Understand, K3=Apply, K4=Analyze, K5=Evaluate, K6=Create)       1											Bloom's Taxonomy   Knowledg e Dimension		
	CO1	Examin unders State &	ne and a tanding z Societ	associat of Poli tal form	te the an ty in In ation w	ncient i diaExa vith the	roots ar umine a unders	nd deta nd ass standir	ils of S ociate t ng of Pc	tate & s he anci- olity in l	Societa ent root India	l format ts and d	tion wit letails o	th the f	K3/F,C
	CO2	Examin present	Examine the important knowledge of Indian Literature, Culture, Tradition, Practices to present Indian System.												
	CO3	Correla Religio	Correlate the Indian Religion, Philosophy, Practices and shadow of Pre-Vedic and Vedic Religion, Buddhism, Jainism, Six System Indian Philosophy in present system												K3/F,C
CO \ PO M	lapping	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO</b> 7	PO8	PO9	PO10	PO1 1	PO1 2	PS O1	PSO2
CO1		-	-	-	1	-	2	-	1	1	-	-	1	-	-
CO2		1 - 2 - 1 1 - <u>1</u> -										-			
CO3 1 - 2 - 1 - 1 -										-					



#### **Practical**

Software Engineeri ng Lab(KCS 651)			Bloom 7	Faxonomy	At (K1=Rem	t <b>he end o</b> ember, K2=	<b>f course,</b> =Understar	<b>students</b> nd, K3=Apj	<b>will be a</b> ply, K4=Ar	<b>ible to:</b> nalyze, K5	=Evaluate,	K6=Create	2)		Bloom's Taxonomy   Knowledg e Dimensio n
	CO1	Disco its fur	ver aml	biguitie and no	s, incor n-funct	nsistenc ional re	ies and equirem	incomp ents.	oletenes	ss in SR	S docu	ment ar	nd to ide	entify	K3/P
	CO2	Demo	Demonstrate use case diagrams, class diagrams and UML diagrams from a given problem state												
	CO3	Articulate the use of modern engineering tools for software specification, design, implementati testing.													
CO \ PO M	apping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		2	2	2	2	2	-	-	-	-	-	-	-	-	1
CO2		2	2	2	2	2	-	-	-	-	-	-	-	-	1
CO3		2 2 2 2 2 1 - 1												1	
CO4	)4												-		
CO5		-	-	-	-	-	-	-	-	-	-	-	-	-	-



Data Analytics Lab(KIT65 1)		At the end of course, students will be able to: Bloom Taxonomy (K1=Remember, K2=Understand, K3=Apply, K4=Analyze, K5=Evaluate, K6=Create)														
	CO1	Unde	rstand	the basi	ic techr	niques o	on vario	ous data	a source	es	<u>5-Evaluat</u>	<u>, K0-Creat</u>	<u>c)</u>		K2/P	
	CO2	Apply	oply data preprocessing and dimensionality reduction methods on raw data													
	CO3	Exect	xecution of different algorithms on numeric data for prediction.													
CO \ PO Mar	pping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
CO1		2	2	2	-	2	-	-	-	-	-	-	-	-	-	
CO2		3 3 3 2 2 1 - 3												3		
CO3	3 3 3 2 3 - 2 2											2				



Computer Networks Lab(KCS6 53)	At the end of course, students will be able to: Bloom Taxonomy (K1=Remember, K2=Understand, K3=Apply, K4=Analyze, K5=Evaluate, K6=Create)														Bloom's Taxonomy  Knowledge Dimension
	CO1	<sup>1</sup> Understand the fundamental concepts of computer networking andNetwork topologies.													
	CO2	Know about different types of network devices and design, implement, and analyze simple computer networks													K4/C, P
	CO3	Learn tools	n the b necess	asic ne ary for	etwork enginee	comma ering pr	nds and actice.	d use t	echniqu	ies, ski	lls, and	moder	n netwo	orking	K3/C,P
CO \ PO Maj	pping	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO1 1	PO1 2	PSO 1	PSO2
CO1		1     1     2     2     1     2     2     1     2     1												-	
CO2		1 2 2 2 1 - 2 1 - 1 2 -												2	
CO3		1	2	2	-	2	2	1	2	-	2	1	1	1	-



# CO PO and Mapping of CO PO 4<sup>th</sup> Year

# (2019-2023 BATCH)

## Session:- 2022-23 Semester:- 8th

S. No.	Subje ct	Code
1	HSMC-2 ( RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING)	KHU801
2	Open Elective-III ( Quality Management )	KOE-085
3	Open Elective-IV ( BIG DATA )	KOE-097
4	Project	KIT851

## **Theory**

HSMO RURA DEVELOP ADMINIS' ON AN PLANNIN U801	C-2 ( ML MENT: TRATI ND G)(KH	At the end of course, students will be able to: Bloom Taxonomy (K1=Remember, K2=Understand, K3=Apply, K4=Analyze, K5=Evaluate, K6=Create)													Bloom's Taxonomy  Knowledge Dimension
	CO1	Und	lersta	nd the	e defin	itions,	conce	pts and	d comp	onents	s of R	ural De	velopr	nent	K2/F,C
	CO2	Distinguish among importance, structure, significance and resources of Indian rural economy													K3/F,C
	CO3	App	Apply learning of area development programs and see their impact.												
	CO4	App	oly kn	owled	lge of	rural e	entrepr	eneurs	hip.						K3/F,C
	CO5	Eva	luate	differ	ent me	ethods	for hu	man re	esource	e plann	ing.				K3/F,C
CO\P Mappin	O ng	P 0 1	P O 2	P O 3	P O 4	Р О 5	P O 6	P O 7	P O 8	P O 9	P O 10	РО 11	P O 12	PSO1	PSO2
CO	1	1	2	1	1	1	2	2	3	2	1	2	1	-	-
CO2	2	1 1 1 1 - 2 2 3 2 1 2 1 1										1			
CO	3	1	1	1	1	1	2	1	1	1	1	2	1	-	-
CO4	4	1	1	1	1	-	2	2	3	3	1	2	1	1	1
CO	5	1 1 1 1 1 2 - 3 2 1 2 1 1										1			
Targe	et	1	1.2	1	1	1	2	1.75	2	2	1	2	1	1	1


Open Elective-III ( Quality Manageme nt )(KOE-085)			At the end of course, students will be able to: Bloom Taxonomy (K1=Remember, K2=Understand, K3=Apply, K4=Analyze, K5=Evaluate, K6=Create)									Bloom's Taxonomy  Knowledge Dimension			
	CO1	De qua	escribe the concepts of quality management system in order to manage a product ality.									K2/ C			
	CO2	De ecc	Describe the effective organizational structure and the methods of managing the economic and the human aspects in controlling the quality of a product.								K2/ C				
	CO3	Demonstrate the application of Statistical Quality Control techniques in managing a product quality proactively.								K3/C,P					
	CO4	Describe the various techniques for the evaluation and the improvement of reliability and maintainability as well as the motivational techniques (zero defects, quality circles) for the adaptability of a new quality control system.								K2/ C, P					
	CO5	De	scribe	the ISO	9000 S	Series, 7	Faguchi	metho	d and J	IT in in	provin	g a proc	duct qu	ality.	К2/ С, Р
CO \ PO Mapping		P 0 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO 11	PO 12	PSO 1	PSO2
CO1		3	2	-	-	1	-	-	-	-	-	2	-	-	1
CO2		3 2 1 2					-								
CO3		3	3 2 1 2							2					
CO4		3	3 2 -								2				
CO5		3	2	-	-	1	-	-	-	-	-	1	-	-	1



		At the end of course, students will be able to:										Bloom's Taxonomy Knowledg e Dimension			
	C 01	Discus	s the fur	ndamenta	al conce	pts of Bi	g Data &	& its cha	llenges.						K2/ C,P
Open Elective-I V ( BIG DATA )(KOE-097 )	C O2	Explai	Explain non-relational (NoSQL) database concepts and its Distribution models.										K3/ C,P		
	C O3	Unders	Understand Hadoop Ecosystem and discuss Hadoop Distributed File System (HDFS).									K2/C,P			
	C O4	Discuss Hadoop MapReduce framework, the working of MapReduce on data stored in HDFS and YARN concepts.									K2/ C, P				
	C O5	Apply	Apply No-SQL databases concepts with architecture like HIVE, Pig and their queries.									К3/ С, Р			
CO \ PO Mapping	) g	PO 1	PO 2	РО 3	РО 4	РО 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO1 0	PO 11	PO 12	PSO1	PSO2
CO1		1	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	CO2 2 1				-	-									
CO3 2 2 - 2 1		-	2												
CO4	CO4 2 1 - 1 2						-	2							
CO5 2 1 - 2 2 - - - - -						-	3								

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# **Practical**

Project			At the end of course, students will be able to:											Bloom's Taxonomy  Knowledge Dimension	
	CO1	Analy inforr	ze prol	blems c from m	reative ultiple	ly thronsources	ugh sus s.	tained	critical	investi	gation	by into	egratin	g	K1,K2/C, P
	CO2	Apply princi	Apply fundamental, disciplinary concepts and methods in ways appropriate to their principal areas of study.									K3/ C, P			
(KII 753)	CO3	Demo techn visual	Demonstrate skill and knowledge of current information, technological tools and techniques specific to the professional field of study, using effective oral, written and visual communication									K4/ C,P			
	CO4	Evaluate opinions, validity of ideas or quality of work based on a set of criteria.									K5/ C, P				
	CO5	Test the working model and modify related phases accordingly. Finally integrate all phases									K6/ C, P				
CO \ PO Mapping		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO 11	PO 12	PSO1	PSO2
CO1		3	3	3	3	3	2	1	1	3	3	3	3	1	1
CO2		3	3	3	3	2	2	1	1	3	2	3	3	2	2
CO3		3	3	3	3	2	2	1	1	3	2	3	3	2	3
CO4		3	3	3	3	2	2	1	1	3	2	2	3	2	3
CO5	3	3	3	3	2	2	1	1	3	2	1	2	2	3	



### **Department of CSE(AI)**

Program Name: B.Tech<br/>Course Name: Sensor & InstrumentationAcademic Session: 2022-23<br/>Course Code: KOE-034Year:2022<br/>Course Coordinator Name:Semester: IIICourse OutcomesCourse Code: KOE-034Course Coordinator Name:

After com	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	<b>Revised Bloom's</b>	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Apply the use of sensors for measurement of displacement, force and pressure	PO1, PO2, PSO2	3	С
CO2	Employ commonly used sensors in industry for measurement of temperature, position, acceleration, vibration sensor, flow and level.	PO1, PO3, PO10, PSO2	2	F
CO3	Demonstrate the use of virtual instrumentation in automation industries	PO1, PO3, PO12, PSO2	3	С
CO4	Identify the use of data acquisition methods	PO1, PO2, PO3, PO4, PO10, PO11 PO12, PSO2	2	М
CO5	Comprehend intelligent instrumentation in industrial automation	PO1, PO2, PO3, PO4, PO10, PO12, PSO2	3	F

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. D. B. Miracle		3.	
2.		4.	

fill tobe

**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

### **Department of CSE(AI)**

Program Name: B.Tech Course Name: Universal Human Values <u>Course Outcomes</u> Academic Session: 2022-23 Course Code: KVE-301 Year:2022 Semester: III Course Coordinator Name:

After com	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Understand the process of self-exploration and meaning of natural acceptance.	PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO2	2	Р
CO2	Explore the concept of harmony in the human being (in Myself) being 'I' & 'body' as separate entity	PO6, PO7, PO8, PO9, PO10, PO11, PO12	3	С
CO3	Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual, etc.	PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO2	3	F
CO4	Analyze the process of developing the harmony in nature and existence.	PO6, PO7, PO8, PO9, PO10, PO11, PO12	4	С
CO5	Apply the role of holistic understanding of harmony of professional ethics.	PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO2	5	С

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Veena Parihar		3.	
2.		4.	

fill tobe

Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO PO/APO/PSO Matrix.
- ♦ If there is no correlation, then put a "-" (dash).

### **Department of CSE(AI)**

Program Name: B.Tech Course Name: Data Structure <u>Course Outcomes</u> Academic Session: 2022-23 Course Code: KCS-301 Year:2022 Semester: III Course Coordinator Name:

After com	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Understand the concept of Dynamic memory management, data types, algorithms.	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO1	2	F
CO2	Understand basic data structures such as arrays, linked lists, stacks, and queues	PO1, PO2, PO4, PO5, PO10, PO11, PO12, PSO1	2	F
CO3	Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO1	5	С
CO4	Evaluate the expressions using Stack and use the concept of stack and queue in finding programming solutions.	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO1	4	F
CO5	Contrast the role of Graph and find the solutions of the problems using Graph methods.	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO1	4	М

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Nagesh Sharma		3.	
2.		4.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

#### **Department of CSE(AI)** Academic Session: 2022-23

**Program Name: B.Tech** Course Name: Computer Organization and Architecture Course Code: KCS-302 **Course Outcomes** 

**Year:2022** 

Semester: III

**Course Coordinator Name:** 

After com	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Summarize the fundamental components of basic computer system and its organization	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	2	С
CO2	Apply arithmetic and logical microoperations on binary number system	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	4	F
CO3	Illustrate control unit design and concept of pipelining	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	4	М
CO4	Examine memory hierarchy and numerical problem	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	3	С
C05	Analyze the concept of input output organization.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	4	F

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Bhawna		3.	
2.		4.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

The strength of correlation between COs and POs/PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO -\* PO/APO/PSO Matrix.

If there is no correlation, then put a "-" (dash). \*

#### **Department of CSE(AI)** Academic Session: 2022-23

**Program Name: B.Tech Course Name: Discrete Structures & Theory of Logic Course Outcomes** 

**Course Code: KCS-303** 

**Year:2022** 

Semester: III

**Course Coordinator Name:** 

After com	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Illustrate basic mathematical objects and their properties.	PO1, PO2, PSO2	4	С
CO2	Examine the structures and properties of modern algebra	PO1, PSO2	3	F
CO3	Solve substantial experience of formal and logical arguments.	PO1, PO3, PO12, PSO2	3	С
CO4	Justify the mathematical properties via the formal language of propositional and predicate logic.	PO1, PO2, PO3, PO4, PO10, PO12, PSO2	5	F
C05	Evaluate the problems using graph and tree as a tool.	PO1, PO2, PO3, PO4, PO10, PO12, PSO2	4	М

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Richa Singh		3.	
2.		4.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should \* have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are \* Condition and Criteria.

#### **Department of CSE(AI)** Academic Session: 2022-23

Program Name: B.Tech Course Name: Computer System Security <u>Course Outcomes</u>

Course Code: KNC-301

01 Course Coordinator Name:

**Year:2022** 

Semester: III

Relevant POs/ PSOs/ APOs Revised Bloom's Knowledge Category After completion of the course, the student will be able to (KC) Level (BL) **Statement of Course Outcome** CO No. PO1, PO3, PO4, PO5, PO6, PO7, PO8, PO9, **CO1** Build basic programs using fundamental programming. Р 2 PO10, PO11, PO12, PSO1 PO1, PO3, PO4, PO5, PO6, PO7, PO8, PO9, **CO2** Develop Python programs with conditionals and loops. С 4 PO10, PO11, PO12, PSO1 PO1, PO3, PO4, PO5, Define Python functions and to use Python data structures -- lists, PO6, PO7, PO8, PO9, **CO3** F 1 tuples, dictionaries PO10, PO11, PO12, PSO1 PO1, PO3, PO4, PO5, PO6, PO7, PO8, PO9, **CO4** Implement input/output with files in Python 3 С PO10, PO11, PO12, PSO1 PO1. PO3. PO4. PO5. PO6, PO7, PO8, PO9, **CO5** Explore searching, sorting and merging in Python 4 Μ PO10, PO11, PO12, PSO1

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Richa Singh		3.	
2.		4.	

### Signature of Course Coordinator

Assoc./ Asst. Head DOC

#### Signature of Addl. HoD

#### Signature of HoD

Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO - PO/APO/PSO Matrix.

♦ If there is no correlation, then put a "-" (dash).

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	<u>Department of CSEL</u>	AU	
Program Name: B.Tech	Academic Session: 2022-23	Year:2022	Semester: III
Course Name: Data Structure Using C Lab	Course Code: KCS-351	<b>Course Coordina</b>	tor Name:
Course Outcomes			

After com	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	<b>Revised Bloom's</b>	Knowledge Category	
CO No.	Statement of Course Outcome		Level (BL)	(KC)	
CO1	Implement various operations on Array, Linked List searching and sorting.	PO1, PO2 PO3, PO4, PO5, PO10, PO11 PO12, PSO1	5	С	
CO2	Perform the concept of Stack and Queue using Array and Linked List.	PO1, PO2 PO3, PO4, PO5, PO10, PO11 PO12, PSO1	4	F	
CO3	Use and implement the concept of Tree and Graph Data Structure using Array and Linked List.	PO1, PO2 PO3, PO4, PO5, PO10, PO11 PO12, PSO1	5	С	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Nagesh Shaarma		5.	
2. Ms. Veena Parihar		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

Signature of HoD

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

### **Department of CSE(AI)**

**Program Name: B.Tech Course Name: Computer Organization Lab Course Outcomes** 

Academic Session: 2022-23 **Course Code: KCS-352** 

**Year:2022** 

Semester: III

**Course Coordinator Name:** 

After com	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Design basic digital circuits	PO1, PO2, PO12, PSO1	6	С
CO2	Design 8 bits I/O, ALU and Adder & Subtractor.	PO1, PO2 PO3, PO6, PO12, PSO1	6	С
CO3	Analyze the concept of binary to gray code converter & gray to binary code converter.	PO1, PO2 PO3, PO4, PO12, PSO1	5	С

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Bhawna		5.	
2. Ms. Veena Parihar		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO -\* PO/APO/PSO Matrix.
- If there is no correlation, then put a "-" (dash). \*

### **Department of CSE(AI)**

**Program Name: B.Tech Course Name: Discrete Structures & Logic Lab Course Outcomes** 

Academic Session: 2022-23 **Course Code: KCS-353** 

**Year:2022** 

Semester: III

**Course Coordinator Name:** 

After com	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Formulate various operations of set, Boolean algebra, recursion and MI	PO1, PO5, PO9, PO12, PSO2	6	М
CO2	Implement the concept of minimum cost spanning tree and shortest path in graph.	PO1, PO5, PO9, PO12, PSO2	5	F
CO3	Perform Permutation, combination, and probability for various problems	PO1, PO2,PO4, PO5, PO9, PO12, PSO2	4	С

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Nagesh Sharma		5.	
2. Ms. Richa Singh		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should \* have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are \* Condition and Criteria.

### **Department of CSE (AI)**

Program Name: B.Tech<br/>Course Name: Sensor & InstrumentationAcademic Session: 2022-23<br/>Course Code: KOE-034Year:2022<br/>Course Coordinator Name:

### CO - PO/PSO/APO Matrix

		Programme Outcome (PO)										PSO	/ APO	
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	2												1
CO2	2		1							1				1
CO3	3		1									2		1
CO4	3	2	2	3						2	1	2		2
CO5	2	2	3	2						2		2		2
PO Target	2.4	1.2	1.4	1						1	0.2	1.2		1.4

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. D. B. Miracle		5.	
2.		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

### **Department of CSE (AI)**

Program Name: B.Tech Course Name: Universal Human Values Academic Session: 2022-23 Course Code: KVE-301

Year:2022 Semester: III Course Coordinator Name:

#### CO - PO/PSO/APO Matrix

		Programme Outcome (PO)											PSO/ APO	
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01						1	1	1	1	1	1	1		1
CO2						3	2	3	2	1	1	2		-
CO3						3	2	3	2	1	1	2		2
CO4						3	2	3	2	1	1	2		-
CO5						3	2	3	2	1	1	2		2
PO Target						2.6	1.8	2.6	1.8	1	1	1.8		1

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Veena Parihar		5.	
2.		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO - PO/APO/PSO Matrix.

♦ If there is no correlation, then put a "-" (dash).

### **Department of CSE(AI&ML)**

Program Name: B.TechAcademic Session: 2022-23Year:2022Semester: IIICourse Name: Data StructureCourse Code: KCS-301Course Coordinator Name:

#### **<u>CO - PO/PSO/APO Matrix</u>**

	Programme Outcome (PO)										PSO	/ APO		
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	1	2	2	1					2	2	л 1	3	
CO2	2	-		2						2	2		2	
CO3	2	2	-	2	2					2	3	3	3	
	3	2	1	2	3					2	3	3	3	
CO4	3	2	3	2	3					2	3	3	3	
CO5	3	3	3	3	3					2	3	3	3	
PO Target	2.6	2	1.8	2.2	2.4					2	3	3	3	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Nagesh Sharma		5.	
2.		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

**Department of CSE(AI)** 

**Program Name: B.Tech** 

Academic Session: 2022-23 Course Name: Computer Organization and Architecture Course Code: KCS-302

**Year:2022** 

Semester: III

**Course Coordinator Name:** 

### CO - PO/PSO/APO Matrix

					Progra	amme (	Outcom	e (PO)					PSO/ APO	
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	2	2	2							2	3	
CO2	3	2	2	2	2							2	3	
CO3	2	2	2	2	2							2	3	
CO4	3	2	2	2	2							2	3	
CO5	3	2	3	2	2							2	3	
PO Target	2.8	2	2.2	2	2							2	3	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Bhawna		5.	
2.		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO -\* PO/APO/PSO Matrix.

If there is no correlation, then put a "-" (dash). \*

### **Department of CSE(AI)**

Program Name: B.Tech Course Name: Discrete Structures & Theory of Logic Academic Session: 2022-23 Course Code: KCS-303 Year:2022 Course Coordinator Name: Semester: III

CO - PO/PSO/APO Matrix

					Progra	amme (	Outcom	e (PO)					P	SO
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	3	2												2
CO2	2													2
CO3	3		2									2		2
CO4	3	2	2	3						2		2		2
CO5	3	2	3	2						2		2		2
PO Target	2.8	1.2	1.4	1	0	0	0	0	0	0.8	0	1.2	0	2

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Richa Singh		5.	
2.		6.	
3.		7.	
4.		8.	

**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

### **Department of CSE(AI)**

Program Name: B.Tech	Academic Session: 2022-23	3 Year:2022
<b>Course Name: Computer System Security</b>	<b>Course Code: KNC-301</b>	<b>Course Coordinator Name:</b>

Semester: III

#### **CO - PO/PSO/APO Matrix**

					Progra	amme (	Dutcom	e (PO)					PSO	
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1	1	2	1	1	2	2	2	1	2	1	3	1	
CO2	2	1	2	1	1	3	2	2	1	2	1	3	1	
CO3	1	1	2	1	1	2	2	2	1	2	1	3	1	
CO4	2	2	2	1	1	1	2	2	1	2	1	3	1	
CO5	2	2	2	1	1	2	2	2	1	2	1	3	1	
PO Target	1.6	1.4	2	1	1	2	2	2	1	2	1	3	1	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Richa Singh		5.	
2.		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

Year:2022

**Signature of HoD** 

Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO -\* PO/APO/PSO Matrix.

If there is no correlation, then put a "-" (dash). \*

	<u>Department of CSE(A</u>	<u>I)</u>	
Program Name: B.Tech	Academic Session: 2022-23	Year:2022	Semester: III
Course Name: Data Structure Using C Lab	<b>Course Code: KCS-351</b>	<b>Course Coordina</b>	tor Name:

### CO - PO/PSO/APO Matrix

					Progra	amme (	Outcom	e (PO)					PSO	
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	2	3	2					3	2	3	3	
CO2	3	2	2	2	3					3	3	2	3	
CO3	3	2	3	3	2					3	2	3	3	
PO Target	3	2.3	2.3	2.6	2.3					3	2.3	2.6	3	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Nagesh Sharma		5.	
2. Ms. Veena Parihar		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

### **Department of CSE(AI)**

Program Name: B.Tech Course Name: Computer Organization Lab Academic Session: 2022-23 Course Code: KCS-352

23 Year:2022 Course Coordinator Name: Semester: III

CO - PO/PSO/APO Matrix

	Programme Outcome (PO)						P	SO						
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1	2										1	1	
CO2	2	2	1			2						2	1	
CO3	1	2	2									1	1	
PO Target	1.3	2	1	0	0	0.6						1.3	1	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Bhawna		5.	
2. Ms. Veena Parihar		6.	
3.		7.	
4.		8.	

fill tobe **Signature of HoD** 

Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

- The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO PO/APO/PSO Matrix.
- ♦ If there is no correlation, then put a "-" (dash).

### **Department of CSE(AI)**

Program Name: B.Tech Course Name: Discrete Structures & Logic Lab Academic Session: 2022-23 Course Code: KCS-353

on: 2022-23 Year:2022 CS-353 Course Coordinator Name:

Semester: III

<u>CO - PO/PSO/APO Matrix</u>

	Programme Outcome (PO)						P	<b>'SO</b>						
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3				3				2			2		2
CO2	3				3				2			2		3
CO3	3	3		2	3				2			2		3
PO Target	3	1	0	0.6	3	0	0	0	2	0	0	2		2.6

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Nagesh Sharma		5.	
2. Ms. Richa		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.

### **Department of CSE(AI)**

Program Name: B.Tech
<b>Course Name: Maths-IV</b>
Course Outcomes

Academic Session: 2022-23 Course Code: KAS-402 Year:2022 Semester: IV Course Coordinator Name:

After com	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Understand the linear and nonlinear Partial Differential Equations using Lagrange's and Charpit methods.	PO1, PO2, PO12, PSO1	2	F
CO2	Apply the concept of separation of variables to solve wave, heat, Laplace and transmission equations.	PO1, PO2, PO3, PO12, PSO1	3	F
CO3	Determine Moments, M.G.F, Correlations, linear regression.	PO1, PO2, PO3, PO4, PO5, PO12, PSO2	3	С
CO4	Apply the concept of probability to solve discrete and continuous probability distributions.	PO1, PO2, PO3, PO4, PO5, PO12, PSO2	3	М
CO5	Apply the concept of sampling to study t-test, F-test and Chi- square test, One way Analysis of Variance (ANOVA).	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO12, PSO2	3	М

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Dr. Neelam Sharma		3.	
2.		4.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

### **Department of CSE(AI)**

Program Name: B.Tech Course Name: Technical Communication <u>Course Outcomes</u> Academic Session: 2022-23 Course Code: KAS-401 Year:2022 Semester: IV Course Coordinator Name:

After com	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	<b>Revised Bloom's</b>	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Analyze the nature and objectives of Technical Communication relevant for workplace as Engineer.	PO9, PO10, PO12	4	F
CO2	Utilizing the Technical Writing Skills for the purpose of Technical Communication and its exposure in various dimensions.	PO9, PO10, PO12	3	С
CO3	Imbibe presentation strategies inputs with confidence in facing diverse audience in required situations at workplace.	PO9, PO10, PO12	3	М
CO4	Estimate the application of Technical Communication to promote their competence for various media like report generation, resume design, GD, and Interview etc.	PO9, PO10, PO12	4	М
CO5	Evaluate Voice dynamics and select appropriate cues for their own efficacy as fluent and efficient communicators.	PO9, PO10, PO12	5	М

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Dr. Kavita Tiwari		3.	
2.		4.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

Signature of HoD

- The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO PO/APO/PSO Matrix.
- ♦ If there is no correlation, then put a "-" (dash).

### **Department of CSE(AI)**

Program Name: B.Tech Course Name: Operating Systems <u>Course Outcomes</u> Academic Session: 2022-23 Course Code: KCS-401 Year:2022 Semester: IV Course Coordinator Name:

After com	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Acquire knowledge of the operating system and its functionalities, components, and terminologies used in the subject.	PO1, PO2, PO3, PO4, PO5, PO11, PO12, PSO1	2	F
CO2	Integrate the role of process synchronization and the concept of concurrent processes in the operating system	PO1, PO2, PO3, PO4, PSO1	3	С
CO3	Evaluate the process scheduling scenarios based on the existing methods and techniques used in the operating system.	PO1, PO2, PO3, PO4, PO11, PO12, PSO1	5	М
CO4	Analyze the memory management mechanism used in the operating system and how the operating system optimizes memory usage.	PO1, PO2, PO3, PO4, PO11, PO12, PSO1	4	F
CO5	Explore the working of input and output management; and how the operating system performs the disk management.	PO1, PO2, PO3, PO4, PO12, PSO1	4	М

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Richa Singh		3.	
2.		4.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

### **Department of CSE(AI)**

Program Name: B.TechAcademic Session: 2022-23Year:2022Semester: IVCourse Name: Theory of Automata and Formal LanguagesCourse Code: KCS-402Course Coordinator Name:Course OutcomesCourse Code: KCS-402Course Coordinator Name:

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Understand basic concepts of automata theory and formal languages	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO1	2	С
CO2	Construct finite automata and regular expressions for regular languages.	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO1	3	F
CO3	Formuate regular and context-free grammar for formal languages.	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO1	4	М
CO4	Construct the pushdown automata for context-free languages.	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO2	4	F
CO5	Acquire the full understanding of Turing machines for formal languages.	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSo2	2	М

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Nagesh Sharma		3.	
2.		4.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

Signature of HoD

- The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO PO/APO/PSO Matrix.
- ♦ If there is no correlation, then put a "-" (dash).

### **Department of CSE(AI)**

Program Name: B.Tech Course Name: Microprocessor Course C <u>Course Outcomes</u>

Aca Course Code: KCS-403 Co

Academic Session: 2022-23 Course Coordinator Name: Year:2022

Semester: IV

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	<b>Revised Bloom's</b>	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Understand the basic architecture of Microprocessors and its history	PO1, PO2, PO3, PO4, PO9, PO12, PSO1	2	С
CO2	Analyze the detailed s/w & h/w structure of the 8085 Microprocessor.	PO1, PO2, PO3, PO4, PO5, PO9, PO12, PSO1	4	F
CO3	Analyze the detailed s/w & h/w structure of the 8086 Microprocessor.	PO1, PO2, PO3, PO4, PO5, PO9, PO12, PSO1	4	F
CO4	Illustrate the programming model of microprocessors using 8085/8086 microprocessors.	PO1, PO2, PO3, PO4, PO9, PO12, PSO1	3	F
C05	Evaluate the data transfer information through serial & parallel ports.	PO1, PO2, PO3, PO4, PO5, PO9, PO12, PSO1	5	М

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Salim		5.	
2.		6.	

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### Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

### Signature of HoD

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
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### **Department of CSE(AI)**

Program Name: B.Tech	Academic Session: 2022-23		
<b>Course Name: Python Programming</b>	Course Code: KNC-402	<b>Course Coordinator Name:</b>	
<u>Course Outcomes</u>			

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's	<b>Knowledge Category</b>
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Build basic programs using fundamental programming.	PO1, PO3, PO4, PO5, PO12, PSO1	2	F
CO2	Develop Python programs with conditionals and loops.	PO1, PO2, PO3, PO4, PO11, PO12, PSO1	4	М
CO3	Define Python functions and to use Python data structures — lists, tuples, dictionaries	PO1, PO2, PO3, PO4, PO11, PO12, PSO1	1	F
CO4	Implement input/output with files in Python	PO1, PO3, PO4, PO5, PO11, PO12, PSO1	3	С
CO5	Explore searching, sorting and merging in Python	PO1, PO2, PO3, PO4, PO12, PSO1	2	М

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Veena Parihar		3.	
2.		4.	

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Semester: IV

**Year:2022** 

**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO PO/APO/PSO Matrix.
- ♦ If there is no correlation, then put a "-" (dash).

### **Department of CSE(AI)**

Program Name: B.Tech	Academic Session: 2022-23	Year:2022	Semester: IV
Course Name: Operating Systems Lab	Course Code: KCS-451	<b>Course Coordinator Name:</b>	
Course Outcomes			

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	<b>Revised Bloom's</b>	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
	Compare among various CPU scheduling algorithms and apply	PO1, PO2 PO3, PO4,		
<b>CO1</b>	knowledge to identify the best scheduling algorithm as per	PO5, PO9, PO10, PO11	2	F
	software requirement.	PO12, PSO1	_	
	Apply the concept of process synchronization tool like semaphore	PO1, PO2 PO3, PO4,		
CO2	to solve mutual exclusion problem in order to coordinate	PO5, PO9, PO10, PO11	4	С
	concurrent processes.	PO12, PSO1	·	
	Implement the concepts of deadlock in operating systems to	PO1, PO2 PO3, PO4,		
CO3	design and implement various deadlock avoidance algorithms like	PO5, PO9, PO10, PO11	5	С
	Banker's algorithm used in banking system.	PO12, PSO1	U	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Rajeev Kumar Singh		5.	
2. Ms. Richa Singh		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

Signature of HoD

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### **Department of CSE(AI)**

Program Name: B.Tech	Academic Session: 2022-23	Year:2022	Semester: IV
Course Name: Microprocessor Lab	Course Code: KCS-452	<b>Course Coordinator Name:</b>	
Course Outcomes			

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Understanding of microprocessor system	PO1, PO2 PO3, PO4, PO9,PO12, PSO1	2	F
CO2	Development of a flow chart for understanding the data flow	PO1, PO2 PO3, PO4, PO5, PO9, PO12, PSO1	4	С
CO3	Build logic for microprocessor-based system	PO1, PO2 PO3, PO4, PO5, PO9, PO12, PSO1	5	С

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Salim		3.	
2. Ms. Aarti Goel		4.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

Signature of HoD

- The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO PO/APO/PSO Matrix.
- ♦ If there is no correlation, then put a "-" (dash).

		<b>Department of CSE(AI</b>	1	
Program Name: B.Tech	Academic	Session: 2022-23	Year:2022	Semester: IV
<b>Course Name: Python Language Program</b>	ming Lab	Course Code: KCS-453	Course Co	oordinator Name:
Course Outcomes				

After com	pletion of the course, the student will be able to	   Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Apply the concepts of numbers, math functions, strings, list, tuples and dictionaries	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1	4	С
CO2	Evaluate various Sorting and Searching methods in Python	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1	5	С
CO3	Create GUI applications and different File operations in python	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1	6	С

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Veena Parihar		5.	
2. Ms. Bhawna		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

Signature of HoD

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Department of CSE (AI)									
Program Name: B.Tech	Academic Session: 2022-23	Year:2022	Semester: IV						
Course Name: Maths IV	<b>Course Code: KAS-402</b>	<b>Course Coordinator Name:</b>							

### <u>CO - PO/PSO/APO Matrix</u>

	CO No Programme Outcome (PO)								P	<b>'SO</b>				
CO NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	2										2	1	
CO2	2	2	2									2	1	
CO3	2	2	2	2	2							2		1
CO4	2	2	1	1	1							1		1
CO5	2	1	2	2	2	2	2					2		1
PO Target	2	1.8	1.75	1.6	1.66	2	2					1.8		1.5

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Dr. Neelam Sharma		5.	
2.		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

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- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

### **Department of CSE (AI)**

**Program Name:B.Tech Course Name: Technical Communication** 

Academic Session: 2022-23 **Course Code: KAS-401** 

Year:2022 **Course Coordinator Name:**  Semester: IV

### CO - PO/PSO/APO Matrix

	Programme Outcome (PO)									P	PSO			
CO NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1									2	3		3		
CO2									2	3		3		
CO3									2	3		3		
CO4									2	3		3		
CO5									2	3		3		
PO Target									2	3	0	3		

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Dr. Kavita Tiwari		5.	
2.		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** Assoc./ Asst. Head DOC Signature of Addl. HoD

#### **Signature of HoD**

Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO -\* PO/APO/PSO Matrix.

If there is no correlation, then put a "-" (dash). \*

<u>Department of CSE (AI)</u>									
Program Name:B.Tech	Academic Session: 2022-23	Year:2022	Semester: IV						
<b>Course Name: Operating Systems</b>	<b>Course Code: KCS-401</b>	<b>Course Coordinator Name:</b>							

### <u>CO - PO/PSO/APO Matrix</u>

	Programme Outcome (PO)								P	SO				
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	3	2	3	1						1	3	2	-
CO2	1	2	3	2									2	
CO3	3	3	3	3							1	2	2	
CO4	3	2	3	2							1	2	2	-
CO5	2	3	3	3								2	2	
PO Target	2.5	2.6	2.5	2.6	1						1	1.8	2	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Richa Singh		5.	
2.		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

#### Signature of HoD

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

### **Department of CSE (AI)**

Program Name:B.TechAcademic Session: 2022-23Year: 2022Semester: IVCourse Name: Theory of Automata and Formal LanguagesCourse Code: KCS-402Course Coordinator Name:

#### CO - PO/PSO/APO Matrix

	Programme Outcome (PO)											PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	3	2	2	2					1	2	3	3	
CO2	3	2	2	3	2					1	2	3	3	
CO3	3	3	2	3	2					2	2	3	3	
CO4	3	3	2	3	3					1	2	3		3
CO5	3	2	2	3	3					2	2	3		3
PO Target	2.8	2.6	2	2.8	2.4					1.4	2	3	1.8	1.2

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Nagesh Sharma		5.	
2.		6.	
3.		7.	
4.		8.	

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Signature of Course CoordinatorAssoc./ Asst. Head DOCPlease Note (Reference: OBE Guidelines wef. Session 2021 – 22)

Signature of Addl. HoD

#### Signature of HoD

The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO - PO/APO/PSO Matrix.

♦ If there is no correlation, then put a "-" (dash).

### **Department of CSE (AI)**

Program Name:B.Tech Course Name: Microprocessor Academic Session: 2022-23 Course Code: KCS-403 Year:2022 Course Coordinator Name: Semester: IV

CO - PO/PSO/APO Matrix

	Programme Outcome (PO)											PSO		
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	2	1					2			2	2	
CO2	3	3	2	2	1				2			2	2	
CO3	3	3	2	2	1				2			2	2	
CO4	3	3	3	3					2			2	3	
CO5	3	3	2	2	1				2			2	2	
PO Target	3	3	2.2	2	0.6				2			2	2.2	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Salim		5.	
2.		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

Signature of HoD

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.
### **Department of CSE (AI)**

Program Name:B.Tech Course Name: Python Programming Academic Session: 2022-23 Course Code: KNC-402 Year:2022 Course Coordinator Name: Semester: IV

#### CO - PO/PSO/APO Matrix

	Programme Outcome (PO)								P	PSO				
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3		2	2	2							3	2	
CO2	2	2	2	1							1	1	3	
CO3	3	2	2	3							1	2	3	
CO4	3		2	3	2						1	1	3	
CO5	3	2	2	1								2	3	
PO Target	2.8	1.2	2	2	0.8						0.6	1.8	2.8	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Veena Parihar		5.	
2.		6.	
3.		7.	
4.		8.	

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Signature of Course CoordinatorAssoc./ Asst. Head DOCPlease Note (Reference: OBE Guidelines wef. Session 2021 – 22)

Signature of Addl. HoD

Signature of HoD

The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO - PO/APO/PSO Matrix.

♦ If there is no correlation, then put a "-" (dash).

### **Department of CSE (AI)**

rogram Name: D. Tech								
Course Name:	Operating	System Lab						

Academic Session: 2022-23 Course Code: KCS-451 Year:2022 Course Coordinator Name: Semester: IV

#### CO - PO/PSO/APO Matrix

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	Programme Outcome (PO)										PSO			
CO NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	2	2	2	2				2	1	1	1	2	
	3	2	2	2	2				2	I	1	1	2	
CO2														
02	2	2	3	3	2				1	1	2	1	2	
<b>CO3</b>														
COS	3	2	2	2	2				2	1	1	1	2	
PO Target														
10 Talget	2.6	2.3	2.3	2.6	2				1.3	1	1.3	1	2	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Rajeev Kumar Singh		5.	
2. Ms. Richa Singh		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

### **Department of CSE (AI)**

Program Name:B.Tech Course Name: Microprocessor Lab Academic Session: 2022-23 Course Code: KCS-452 Year:2022 Course Coordinator Name: Semester: IV

CO - PO/PSO/APO Matrix

	Programme Outcome (PO)										PSO			
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	2	1					2			2	2	
CO2	3	2	2	2	1				2			2	2	
CO3	3	2	2	2	1				2			2	2	
PO Target	3	2	2	1.6	0.6				2			2	2	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Salim		5.	
2. Ms. Aarti Goel		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

Signature of HoD

- The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO PO/APO/PSO Matrix.
- ♦ If there is no correlation, then put a "-" (dash).

Department of CSE (AI)									
Program Name:B.Tech	Academic	: Session: 2022-23	Year:2022	Semester: IV					
Course Name: Python Language Progr	amming Lab	<b>Course Code: KCS</b>	-453	<b>Course Coordinator Name:</b>					

#### CO - PO/PSO/APO Matrix

	Programme Outcome (PO)										PSO			
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	3	1	3	2	2	2	2	3	3	2	1	3	3	
CO2	2	3	1	3	3	2	1	3	2	2	1	3	3	
CO3	2	2	3	2	3	2	1	3	1	3	1	3	3	
PO Target	2.3	2	2.3	2.3	2.6	2	1.3	3	2	2.3	1	3	3	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Veena Parihar		5.	
2. Ms. Bhawna		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

### **Department of CSE(AI&ML)**

**Program Name: B.Tech Course Name: Sensor & Instrumentation Course Outcomes** 

Academic Session: 2022-23 **Course Code: KOE-034** 

Year:2022 **Course Coordinator Name:**  Semester: III

After com	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Apply the use of sensors for measurement of displacement, force and pressure	PO1, PO2, PSO2	3	С
CO2	Employ commonly used sensors in industry for measurement of temperature, position, acceleration, vibration sensor, flow and level.	PO1, PO3, PO10, PSO2	2	F
CO3	Demonstrate the use of virtual instrumentation in automation industries	PO1, PO3, PO12, PSO2	3	С
CO4	Identify the use of data acquisition methods	PO1, PO2, PO3, PO4, PO10, PO11 PO12, PSO2	2	М
CO5	Comprehend intelligent instrumentation in industrial automation	PO1, PO2, PO3, PO4, PO10, PO12, PSO2	3	F

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. D. B. Miracle		3.	
2.		4.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are \* Condition and Criteria.

### **Department of CSE(AI&ML)**

Program Name: B.Tech Course Name: Universal Human Values <u>Course Outcomes</u> Academic Session: 2022-23 Course Code: KVE-301 Year:2022 Semester: III Course Coordinator Name:

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Understand the process of self-exploration and meaning of natural acceptance.	PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO2	2	Р
CO2	Explore the concept of harmony in the human being (in Myself) being 'I' & 'body' as separate entity	PO6, PO7, PO8, PO9, PO10, PO11, PO12	3	С
CO3	Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual, etc.	PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO2	3	F
CO4	Analyze the process of developing the harmony in nature and existence.	PO6, PO7, PO8, PO9, PO10, PO11, PO12	4	С
CO5	Apply the role of holistic understanding of harmony of professional ethics.	PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO2	5	С

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Veena Parihar		3.	
2.		4.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO PO/APO/PSO Matrix.
- ♦ If there is no correlation, then put a "-" (dash).

### **Department of CSE(AI&ML)**

Program Name: B.Tech Course Name: Data Structure <u>Course Outcomes</u> Academic Session: 2022-23 Course Code: KCS-301 Year:2022 Semester: III Course Coordinator Name:

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Understand the concept of Dynamic memory management, data types, algorithms.	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO1	2	F
CO2	Understand basic data structures such as arrays, linked lists, stacks, and queues	PO1, PO2, PO4, PO5, PO10, PO11, PO12, PSO1	2	F
CO3	Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO1	5	С
CO4	Evaluate the expressions using Stack and use the concept of stack and queue in finding programming solutions.	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO1	4	F
CO5	Contrast the role of Graph and find the solutions of the problems using Graph methods.	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO1	4	М

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Rajeev Kumar Singh		3.	
2.		4.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

#### **Department of CSE(AI&ML)** Academic Session: 2022-23

**Program Name: B.Tech** Course Name: Computer Organization and Architecture Course Code: KCS-302 **Course Outcomes** 

Year:2022

Semester: III

**Course Coordinator Name:** 

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Summarize the fundamental components of basic computer system and its organization	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	2	С
CO2	Apply arithmetic and logical microoperations on binary number system	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	4	F
CO3	Illustrate control unit design and concept of pipelining	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	4	М
CO4	Examine memory hierarchy and numerical problem	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	3	С
C05	Analyze the concept of input output organization.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	4	F

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Bhawna		3.	
2.		4.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO -\* PO/APO/PSO Matrix.
- If there is no correlation, then put a "-" (dash). \*

#### **Department of CSE(AI&ML)**

Program Name: B.Tech Course Name: Discrete Structures & Theory of Logic <u>Course Outcomes</u> Academic Session: 2022-23 Course Code: KCS-303 Year:2022 urse Coordinator Nam Semester: III

**Course Coordinator Name:** 

After completion of the course, the student will be able to		   Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Illustrate basic mathematical objects and their properties.	PO1, PO2, PSO2	4	С
CO2	Examine the structures and properties of modern algebra	PO1, PSO2	3	F
CO3	Solve substantial experience of formal and logical arguments.	PO1, PO3, PO12, PSO2	3	С
CO4	Justify the mathematical properties via the formal language of propositional and predicate logic.	PO1, PO2, PO3, PO4, PO10, PO12, PSO2	5	F
CO5	Evaluate the problems using graph and tree as a tool.	PO1, PO2, PO3, PO4, PO10, PO12, PSO2	4	М

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Seema Chauhan		3.	
2.		4.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

#### **Department of CSE(AI&ML)** Academic Session: 2022-23

**Program Name: B.Tech Course Name: Computer System Security Course Outcomes** 

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**Year:2022** Course Code: KNC-301 Course Coordinator Name: Semester: III

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	<b>Revised Bloom's</b>	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Build basic programs using fundamental programming.	PO1, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1	2	Р
CO2	Develop Python programs with conditionals and loops.	PO1, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1	4	С
CO3	Define Python functions and to use Python data structures — lists, tuples, dictionaries	PO1, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1	1	F
CO4	Implement input/output with files in Python	PO1, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1	3	С
C05	Explore searching, sorting and merging in Python	PO1, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1	4	М

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Seema Chauhan		3.	
2.		4.	

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#### **Signature of Course Coordinator**

Assoc./ Asst. Head DOC

#### Signature of Addl. HoD

#### **Signature of HoD**

Please Note (Reference: OBE Guidelines wef. Session 2021 - 22)

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If there is no correlation, then put a "-" (dash). \*

### **Department of CSE(AI&ML)**

Program Name: B.Tech	Academic Session: 2022-23	Year:2022	Semester: III
Course Name: Data Structure Using C Lab	Course Code: KCS-351	<b>Course Coordinator Na</b>	ime:
Course Outcomes			

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Implement various operations on Array, Linked List searching and sorting.	PO1, PO2 PO3, PO4, PO5, PO10, PO11 PO12, PSO1	5	С
CO2	Perform the concept of Stack and Queue using Array and LinkedList.	PO1, PO2 PO3, PO4, PO5, PO10, PO11 PO12, PSO1	4	F
CO3	Use and implement the concept of Tree and Graph Data Structure using Array and LinkedList.	PO1, PO2 PO3, PO4, PO5, PO10, PO11 PO12, PSO1	5	С

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Rajeev Kumar Singh		5.	
2. Ms. Richa Singh		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

Signature of HoD

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

#### **Department of CSE(AI&ML)** Academic Session: 2022-23

**Program Name: B.Tech Course Name: Computer Organization Lab Course Outcomes** 

**Course Code: KCS-352** 

**Year:2022 Course Coordinator Name:**  Semester: III

After com	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	<b>Revised Bloom's</b>	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Design basic digital circuits	PO1, PO2, PO12, PSO1	6	С
CO2	Design 8 bits I/O, ALU and Adder & Subtractor.	PO1, PO2 PO3, PO6, PO12, PSO1	6	С
CO3	Analyze the concept of binary to gray code converter & gray to binary code converter.	PO1, PO2 PO3, PO4, PO12, PSO1	5	С

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Bhawna		5.	
2. Ms. Richa Singh		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

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- If there is no correlation, then put a "-" (dash). \*

### **Department of CSE(AI&ML)**

**Program Name: B.Tech Course Name: Discrete Structures & Logic Lab Course Outcomes** 

Academic Session: 2022-23 **Course Code: KCS-353** 

**Year:2022** 

Semester: III

**Course Coordinator Name:** 

After con	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Formulate various operations of set, Boolean algebra, recursion and MI	PO1, PO5, PO9, PO12, PSO2	6	М
CO2	Implement the concept of minimum cost spanning tree and shortest path in graph.	PO1, PO5, PO9, PO12, PSO2	5	F
CO3	Perform Permutation, combination, and probability for various problems	PO1, PO2,PO4, PO5, PO9, PO12, PSO2	4	С

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Rajeev Kumar Singh		5.	
2. Ms. Richa Singh		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

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### **Department of CSE (AI&ML)**

Program Name: B.TechAcadeCourse Name: Sensor & InstrumentationCourse

Academic Session: 2022-23 Course Code: KOE-034 Year:2022 Semester: III Course Coordinator Name:

### CO - PO/PSO/APO Matrix

					Progra	amme (	Dutcom	e (PO)					PSO/ APO	
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	2												1
CO2	2		1							1				1
CO3	3		1									2		1
CO4	3	2	2	3						2	1	2		2
CO5	2	2	3	2						2		2		2
PO Target	2.4	1.2	1.4	1						1	0.2	1.2		1.4

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. D. B. Miracle		5.	
2.		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

#### **Department of CSE (AI&ML)**

Program Name: B.Tech Course Name: Universal Human Values Academic Session: 2022-23 Course Code: KVE-301

Year:2022 Semester: III Course Coordinator Name:

#### CO - PO/PSO/APO Matrix

					Progra	amme (	Outcom	e (PO)					PSO/ APO	
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01						1	1	1	1	1	1	1		1
CO2						3	2	3	2	1	1	2		-
CO3						3	2	3	2	1	1	2		2
CO4						3	2	3	2	1	1	2		-
CO5						3	2	3	2	1	1	2		2
PO Target						2.6	1.8	2.6	1.8	1	1	1.8		1

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Veena Parihar		5.	
2.		6.	
3.		7.	
4.		8.	

f.16 6-41

Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO - PO/APO/PSO Matrix.

♦ If there is no correlation, then put a "-" (dash).

#### **Department of CSE(AI&ML)**

Program Name: B.TechAcademic Session: 2022-23Year:2022Semester: IIICourse Name: Data StructureCourse Code: KCS-301Course Coordinator Name:

#### CO - PO/PSO/APO Matrix

					Progra	amme (	Outcom	ne (PO)					PSO/ APO	
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	1	2	2	1					2	3	3	3	
CO2	2	2	-	2	2					2	3	3	3	
CO3	3	2	1	2	3					2	3	3	3	
CO4	3	2	3	2	3					2	3	3	3	
C05	3	3	3	3	3					2	3	3	3	
PO Target	2.6	2	1.8	2.2	2.4					2	3	3	3	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Rajeev Kumar Singh		5.	
2.		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

Signature of HoD

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

**Department of CSE(AI&ML)** 

**Program Name: B.Tech** 

Academic Session: 2022-23 Course Name: Computer Organization and Architecture Course Code: KCS-302

**Year:2022 Course Coordinator Name:**  Semester: III

CO - PO/PSO/APO Matrix

					Progr	amme (	Dutcom	e (PO)					PSO	/ APO
CO No.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	2	2	2							2	3	
CO2	3	2	2	2	2							2	3	
CO3	2	2	2	2	2							2	3	
CO4	3	2	2	2	2							2	3	
CO5	3	2	3	2	2							2	3	
PO Target	2.8	2	2.2	2	2							2	3	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Bhawna		5.	
2.		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

The strength of correlation between COs and POs/PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO -\* PO/APO/PSO Matrix.

If there is no correlation, then put a "-" (dash). \*

### **Department of CSE(AI&ML)**

Program Name: B.Tech Course Name: Discrete Structures & Theory of Logic Academic Session: 2022-23 Course Code: KCS-303 Year:2022 Course Coordinator Name: Semester: III

CO - PO/PSO/APO Matrix

					Progra	amme (	Outcom	e (PO)					P	SO
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2												2
CO2	2													2
CO3	3		2									2		2
CO4	3	2	2	3						2		2		2
CO5	3	2	3	2						2		2		2
PO Target	2.8	1.2	1.4	1	0	0	0	0	0	0.8	0	1.2	0	2

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Seema Chauhan		5.	
2.		6.	
3.		7.	
4.		8.	

Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

#### **Department of CSE(AI&ML)**

Program Name: B.TechAcademic Session: 2022-23Year:2022Course Name: Computer System SecurityCourse Code: KNC-301Course Coordinator Name:

Semester: III

#### CO - PO/PSO/APO Matrix

					Progra	amme (	Outcom	e (PO)					P	<b>'SO</b>
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1	1	2	1	1	2	2	2	1	2	1	3	1	
CO2	2	1	2	1	1	3	2	2	1	2	1	3	1	
CO3	1	1	2	1	1	2	2	2	1	2	1	3	1	
CO4	2	2	2	1	1	1	2	2	1	2	1	3	1	
CO5	2	2	2	1	1	2	2	2	1	2	1	3	1	
PO Target	1.6	1.4	2	1	1	2	2	2	1	2	1	3	1	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Seema Chauhan		5.	
2.		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

or Assoc./ Asst. Head DOC

Signature of Addl. HoD

Signature of HoD

Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO - PO/APO/PSO Matrix.

♦ If there is no correlation, then put a "-" (dash).

<u>Department of CSE(AI&amp;ML)</u>									
h	Academic Session: 2022-23	Year:2022	Semester: III						

Program Name: B.Tech A Course Name: Data Structure Using C Lab

Course Code: KCS-351

Course Coordinator Name:

### CO - PO/PSO/APO Matrix

	Programme Outcome (PO)													SO
CU NO.	1 2 3 4 5 6 7 8 9 10 11 12									1	2			
CO1	3	3	2	3	2					3	2	3	3	
CO2	3	2	2	2	3					3	3	2	3	
CO3	3	2	3	3	2					3	2	3	3	
PO Target	3	2.3	2.3	2.6	2.3					3	2.3	2.6	3	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Rajeev Kumar Singh		5.	
2. Ms. Richa Singh		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
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### **Department of CSE(AI&ML)**

Program Name: B.Tech Course Name: Computer Organization Lab Academic Session: 2022-23 Course Code: KCS-352

2-23 Year:2022 Course Coordinator Name: Semester: III

CO - PO/PSO/APO Matrix

					Progra	amme (	Dutcom	ne (PO)					P	PSO	
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO1	1	2										1	1		
CO2	2	2	1			2						2	1		
CO3	1	2	2									1	1		
PO Target	1.3	2	1	0	0	0.6						1.3	1		

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Bhawna		5.	
2. Ms. Richa Singh		6.	
3.		7.	
4.		8.	

Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

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- The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO PO/APO/PSO Matrix.
- ♦ If there is no correlation, then put a "-" (dash).

### **Department of CSE(AI&ML)**

Program Name: B.Tech Course Name: Discrete Structures & Logic Lab Academic Session: 2022-23 Course Code: KCS-353

022-23 Year:2022 53 Course Coordinator Name: Semester: III

CO - PO/PSO/APO Matrix

					Progra	amme (	Outcom	e (PO)					P	PSO	
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO1	3				3				2			2		2	
CO2	3				3				2			2		3	
CO3	3	3		2	3				2			2		3	
PO Target	3	1	0	0.6	3	0	0	0	2	0	0	2		2.6	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Rajeev Kumar Singh		5.	
2. Ms. Seema Chauhan		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.

Program Name: B.Tech Course Name:Maths-IV <u>Course Outcomes</u> Department of CSE(AI&ML) Academic Session: 2022-23 Ve

Semester: IV

Course Code: KAS-402

Year:2022 Course Coordinator Name:

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Relevant POs/ PSOs/ APOs Revised Bloom's Knowledge Category After completion of the course, the student will be able to (KC) Level (BL) CO No. **Statement of Course Outcome** Understand the linear and nonlinear Partial Differential Equations **CO1** PO1, PO2, PO12, PSO1 F 2 using Lagrange's and Charpit methods. Apply the concept of separation of variables to solve wave, heat, PO1, PO2, PO3, PO12, **CO2** F Laplace and transmission equations. 3 PSO1 PO1, PO2, PO3, PO4, **CO3** Determine Moments, M.G.F, Correlations, linear regression. С 3 PO5, PO12, PSO2 Apply the concept of probability to solve discrete and continuous PO1, PO2, PO3, PO4, **CO4** 3 Μ probability distributions. PO5, PO12, PSO2 PO1. PO2. PO3. PO4. Apply the concept of sampling to study t-test, F-test and Chi-**CO5** PO5, PO6, PO7, PO12, 3 Μ square test, One way Analysis of Variance (ANOVA). PSO2

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Dr. Neelam Sharma		3.	
2.		4.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

### **Department of CSE(AI&ML)**

Program Name: B.Tech Course Name: Technical Communication <u>Course Outcomes</u> Academic Session: 2022-23 Course Code: KAS-401 Year:2022 Semester: IV Course Coordinator Name:

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Analyze the nature and objectives of Technical Communication relevant for workplace as Engineer.	PO9, PO10, PO12	4	F
CO2	Utilizing the Technical Writing Skills for the purpose of Technical Communication and its exposure in various dimensions.	PO9, PO10, PO12	3	С
CO3	Imbibe presentation strategies inputs with confidence in facing diverse audience in required situations at workplace.	PO9, PO10, PO12	3	М
CO4	Estimate the application of Technical Communication to promote their competence for various media like report generation, resume design, GD, and Interview etc.	PO9, PO10, PO12	4	М
CO5	Evaluate Voice dynamics and select appropriate cues for their own efficacy as fluent and efficient communicators.	PO9, PO10, PO12	5	М

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Dr. Kavita Tiwari		3.	
2.		4.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

Signature of HoD

- The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO PO/APO/PSO Matrix.
- ♦ If there is no correlation, then put a "-" (dash).

### **Department of CSE(AI&ML)**

Program Name: B.Tech Course Name: Operating Systems <u>Course Outcomes</u> Academic Session: 2022-23 Course Code: KCS-401 Year:2022 Semester: IV Course Coordinator Name:

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Acquire knowledge of the operating system and its functionalities, components, and terminologies used in the subject.	, PO1, PO2, PO3, PO4, PO5, PO11, PO12, PSO1	2	F
CO2	Integrate the role of process synchronization and the concept of concurrent processes in the operating system	PO1, PO2, PO3, PO4, PSO1	3	С
CO3	Evaluate the process scheduling scenarios based on the existing methods and techniques used in the operating system.	PO1, PO2, PO3, PO4, PO11, PO12, PSO1	5	М
CO4	Analyze the memory management mechanism used in the operating system and how the operating system optimizes memory usage.	PO1, PO2, PO3, PO4, PO11, PO12, PSO1	4	F
CO5	Explore the working of input and output management; and how the operating system performs the disk management.	PO1, PO2, PO3, PO4, PO12, PSO1	4	М

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Bhawna		3.	
2.		4.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

#### **Signature of HoD**

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
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#### **Department of CSE(AI&ML)** Academic Session: 2022-23

**Program Name: B.Tech** 

**Course Code: KCS-402** 

**Year:2022** 

Semester: IV

Course Name: Theory of Automata and Formal Languages **Course Outcomes** 

**Course Coordinator Name:** 

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Understand basic concepts of automata theory and formal languages	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO1	2	С
CO2	Construct finite automata and regular expressions for regular languages.	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO1	3	F
CO3	Formuate regular and context-free grammar for formal languages.	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO1	4	М
CO4	Construct the pushdown automata for context-free languages.	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSO2	4	F
CO5	Acquire the full understanding of Turing machines for formal languages.	PO1, PO2, PO3, PO4, PO5, PO10, PO11, PO12, PSo2	2	М

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Nagesh Sharma		3.	
2.		4.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO -\* PO/APO/PSO Matrix.
- If there is no correlation, then put a "-" (dash). \*

## **Department of CSE(AI&ML)**

**Program Name: B.Tech Course Name: Microprocessor Course Outcomes** 

**Course Code: KCS-403** 

Academic Session: 2022-23 **Course Coordinator Name:**  **Year:2022** 

Semester: IV

Relevant POs/ PSOs/ APOs Revised Bloom's Knowledge Category After completion of the course, the student will be able to (KC) Level (BL) CO No. **Statement of Course Outcome** Understand the basic architecture of Microprocessors and its PO1, PO2, PO3, PO4, **CO1** С 2 PO9. PO12. PSO1 history Analyze the detailed s/w & h/w structure of the 8085 PO1, PO2, PO3, PO4, **CO2** F 4 Microprocessor. PO5, PO9, PO12, PSO1 Analyze the detailed s/w & h/w structure of the 8086 PO1, PO2, PO3, PO4, F **CO3** 4 Microprocessor. PO5, PO9, PO12, PSO1 Illustrate the programming model of microprocessors using PO1, PO2, PO3, PO4, **CO**4 3 F 8085/8086 microprocessors. PO9, PO12, PSO1 PO1, PO2, PO3, PO4, Evaluate the data transfer information through serial & parallel **CO5** 5 Μ PO5, PO9, PO12, PSO1 ports.

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Salim		5.	
2.		6.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

#### **Signature of HoD**

- \* The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
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#### **Department of CSE(AI&ML)** Academic Session: 2022-23

**Program Name: B.Tech** 

**Year:2022** 

Semester: IV

**Course Name: Python Programming Course Outcomes** 

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**Course Code: KNC-402** 

**Course Coordinator Name:** 

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After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	<b>Revised Bloom's</b>	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Build basic programs using fundamental programming.	PO1, PO3, PO4, PO5, PO12, PSO1	2	F
CO2	Develop Python programs with conditionals and loops.	PO1, PO2, PO3, PO4, PO11, PO12, PSO1	4	М
CO3	Define Python functions and to use Python data structures — lists, tuples, dictionaries	PO1, PO2, PO3, PO4, PO11, PO12, PSO1	1	F
CO4	Implement input/output with files in Python	PO1, PO3, PO4, PO5, PO11, PO12, PSO1	3	С
C05	Explore searching, sorting and merging in Python	PO1, PO2, PO3, PO4, PO12, PSO1	2	М

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Rajeev Kumar Singh		3.	
2.		4.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO -\* PO/APO/PSO Matrix.
- If there is no correlation, then put a "-" (dash). \*

### **Department of CSE(AI&ML)**

Program Name: B.Tech Course Name: Operating Systems Lab <u>Course Outcomes</u>

Academic Session: 2022-23 Course Code: KCS-451 Year:2022 Course Coordinator Name:

Semester: IV

Relevant POs/ PSOs/ APOs Revised Bloom's Knowledge Category After completion of the course, the student will be able to **KC**) Level (BL) CO No. **Statement of Course Outcome** PO1. PO2 PO3. PO4. Compare among various CPU scheduling algorithms and apply knowledge to identify the best scheduling algorithm as per PO5, PO9, PO10, PO11 F **CO1** 2 software requirement. PO12, PSO1 Apply the concept of process synchronization tool like semaphore PO1, PO2 PO3, PO4, to solve mutual exclusion problem in order to coordinate PO5, PO9, PO10, PO11 С **CO2** 4 PO12, PSO1 concurrent processes. Implement the concepts of deadlock in operating systems to PO1. PO2 PO3. PO4. design and implement various deadlock avoidance algorithms like PO5, PO9, PO10, PO11 **CO3** С 5 PO12, PSO1 Banker's algorithm used in banking system.

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Rajeev Kumar Singh		5.	
2. Ms. Bhawna		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

Signature of HoD

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
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Department of CSE(AI&ML) nic Session: 2022-23 Year:2022

Semester: IV

Program Name: B.Tech Course Name: Microprocessor Lab <u>Course Outcomes</u> Academic Session: 2022-23 Course Code: KCS-452

**Course Coordinator Name:** 

After com	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Understanding of microprocessor system	PO1, PO2 PO3, PO4, PO9,PO12, PSO1	2	F
CO2	Development of a flow chart for understanding the data flow	PO1, PO2 PO3, PO4, PO5, PO9, PO12, PSO1	4	С
CO3	Build logic for microprocessor-based system	PO1, PO2 PO3, PO4, PO5, PO9, PO12, PSO1	5	С

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Salim		3.	
2. Ms. Aarti Goel		4.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

Signature of HoD

- The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO PO/APO/PSO Matrix.
- ♦ If there is no correlation, then put a "-" (dash).

Department of CSE(AI&ML)									
Program Name: B.Tech	Academic S	Session: 2022-23	Year:2022	Semester: IV					
Course Name: Python Language Program	nming Lab	Course Code: KCS-453	<b>Course Co</b>	ordinator Name:					
<u>Course Outcomes</u>									

After com	pletion of the course, the student will be able to	Relevant POs/ PSOs/ APOs	Revised Bloom's	Knowledge Category
CO No.	Statement of Course Outcome		Level (BL)	(KC)
CO1	Apply the concepts of numbers, math functions, strings, list, tuples and dictionaries	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1	4	С
CO2	Evaluate various Sorting and Searching methods in Python	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1	5	С
CO3	Create GUI applications and different File operations in python	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1	6	С

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Rajeev Kumar Singh		5.	
2. Ms. Bhawna		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are \* Condition and Criteria.

## Department of CSE (AI&ML)

Program Name: B.Tech Course Name: Maths IV Academic Session: 2022-23 Course Code: KAS-402 Year:2022 Course Coordinator Name: Semester: IV

CO - PO/PSO/APO Matrix

	Programme Outcome (PO)										PSO			
CO NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	2	2										2	1	
CO2	2	2	2									2	1	
CO3	2	2	2	2	2							2		1
CO4	2	2	1	1	1							1		1
CO5	2	1	2	2	2	2	2					2		1
PO Target	2	1.8	1.75	1.6	1.66	2	2					1.8		1.5

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Dr. Neelam Sharma		5.	
2.		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

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- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

### **Department of CSE (AI&ML)**

Program Name: B. TechAcadeCourse Name: Technical CommunicationCourse

Academic Session: 2022-23 Course Code: KAS-401 Year:2022 Course Coordinator Name: Semester: IV

#### CO - PO/PSO/APO Matrix

	Programme Outcome (PO)												PSO	
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1									2	3		3		
CO2									2	3		3		
CO3									2	3		3		
CO4									2	3		3		
CO5									2	3		3		
PO Target									2	3	0	3		

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Dr. Kavita Tiwari		5.	
2.		6.	
3.		7.	
4.		8.	

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Signature of Course CoordinatorAssoc./ Asst. Head DOCPlease Note (Reference: OBE Guidelines wef. Session 2021 – 22)

Signature of Addl. HoD

Signature of HoD

The strength of correlation between COs and POs/ PSOs/APOs should be represented as 1 (low correlation), 2 (medium correlation) and 3 (high correlation) in CO - PO/APO/PSO Matrix.

♦ If there is no correlation, then put a "-" (dash).

Department of CSE (AI&ML)										
Program Name:B.Tech	Academic Session: 2022-23	Year:2022	Semester: IV							
<b>Course Name: Operating Systems</b>	<b>Course Code: KCS-401</b>	<b>Course Coordinator Name:</b>								

#### CO - PO/PSO/APO Matrix

	Programme Outcome (PO)									PSO				
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	3	2	3	1						1	3	2	-
CO2	1	2	3	2									2	
CO3	3	3	3	3							1	2	2	
CO4	3	2	3	2							1	2	2	-
CO5	2	3	3	3								2	2	
PO Target	2.5	2.6	2.5	2.6	1						1	1.8	2	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Bhawna		5.	
2.		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** 

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

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### **Department of CSE (AI&ML)**

Academic Session: 2022-23 Year:2022 **Program Name:B.Tech** Semester: IV **Course Name: Theory of Automata and Formal Languages** Course Code: KCS-402 Course Coordinator Name:

#### CO - PO/PSO/APO Matrix

	Programme Outcome (PO)											PSO		
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	3	2	2	2					1	2	3	3	
CO2	3	2	2	3	2					1	2	3	3	
CO3	3	3	2	3	2					2	2	3	3	
CO4	3	3	2	3	3					1	2	3		3
CO5	3	2	2	3	3					2	2	3		3
PO Target	2.8	2.6	2	2.8	2.4					1.4	2	3	1.8	1.2

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Nagesh Sharma		5.	
2.		6.	
3.		7.	
4.		8.	

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**Signature of Course Coordinator** Assoc./ Asst. Head DOC Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

Signature of Addl. HoD

#### **Signature of HoD**

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If there is no correlation, then put a "-" (dash). \*

### Department of CSE (AI&ML)

Program Name:B.Tech Course Name: Microprocessor Academic Session: 2022-23 Course Code: KCS-403 Year:2022 Course Coordinator Name: Semester: IV

#### CO - PO/PSO/APO Matrix

	Programme Outcome (PO)											PSO		
U NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	2	1					2			2	2	
CO2	3	3	2	2	1				2			2	2	
CO3	3	3	2	2	1				2			2	2	
CO4	3	3	3	3					2			2	3	
CO5	3	3	2	2	1				2			2	2	
PO Target	3	3	2.2	2	0.6				2			2	2.2	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Salim		5.	
2.		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

Signature of HoD

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#### **Department of CSE (AI&ML)**

Program Name:B.Tech Course Name: Python Programming Academic Session: 2022-23 Course Code: KNC-402 Year:2022 Course Coordinator Name: Semester: IV

#### CO - PO/PSO/APO Matrix

					Progra	amme (	Outcom	e (PO)					P	SO
CO No.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3		2	2	2							3	2	
CO2	2	2	2	1							1	1	3	
CO3	3	2	2	3							1	2	3	
CO4	3		2	3	2						1	1	3	
CO5	3	2	2	1								2	3	
PO Target	2.8	1.2	2	2	0.8						0.6	1.8	2.8	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Rajeev Kumar Singh		5.	
2.		6.	
3.		7.	
4.		8.	

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Signature of Course CoordinatorAssoc./ Asst. Head DOCPlease Note (Reference: OBE Guidelines wef. Session 2021 – 22)

Signature of Addl. HoD

Signature of HoD

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♦ If there is no correlation, then put a "-" (dash).

### **Department of CSE (AI&ML)**

Program Name:B.Tech Course Name: Operating System Lab Academic Session: 2022-23 Course Code: KCS-451 Year:2022 Course Coordinator Name: Semester: IV

#### CO - PO/PSO/APO Matrix

		Programme Outcome (PO)												
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	3	2	2	2	2				2	1	1	1	2	
CO2	2	2	3	3	2				1	1	2	1	2	
CO3	3	2	2	2	2				2	1	1	1	2	
PO Target	2.6	2.3	2.3	2.6	2				1.3	1	1.3	1	2	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Rajeev Kumar Singh		5.	
2. Ms. Bhawna		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

#### Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

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#### **Department of CSE (AI&ML)**

Program Name:B.Tech Course Name: Microprocessor Lab Academic Session: 2022-23 Course Code: KCS-452 Year:2022 Course Coordinator Name: Semester: IV

CO - PO/PSO/APO Matrix

		Programme Outcome (PO)												
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	2	1					2			2	2	
CO2	3	2	2	2	1				2			2	2	
CO3	3	2	2	2	1				2			2	2	
PO Target	3	2	2	1.6	0.6				2			2	2	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Salim		5.	
2. Ms. Aarti Goel		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

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♦ If there is no correlation, then put a "-" (dash).

	Depa	<u>artment of CSE (Al</u>	( <u>&amp;ML)</u>	
Program Name:B.Tech	Academic S	Session: 2022-23	Year:2022	Semester: IV
Course Name: Python Language Programm	ing Lab	Course Code: KCS-4	153	<b>Course Coordinator Name:</b>

#### CO - PO/PSO/APO Matrix

		Programme Outcome (PO)												
CU NO.	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	1	3	2	2	2	2	3	3	2	1	3	3	
CO2	2	3	1	3	3	2	1	3	2	2	1	3	3	
CO3	2	2	3	2	3	2	1	3	1	3	1	3	3	
PO Target	2.3	2	2.3	2.3	2.6	2	1.3	3	2	2.3	1	3	3	

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Mr. Rajeev Kumar Singh		5.	
2. Ms. Bhawna		6.	
3.		7.	
4.		8.	

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Signature of Course Coordinator

Assoc./ Asst. Head DOC

Signature of Addl. HoD

**Signature of HoD** 

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- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

Electronics & Communication Engineering

**Session 2022-23** 

Odd Sem

**CO Statement and CO-PO Mapping** 

Cours Sem:	se Name/code: Mathematics IV (KAS-302) III Even Semester		Session:2022-23
S.No	Course Outcomes		
Stude	nts will be able to	Bloom	Knowledge
		Level	Dimension
1	Apply the methods for solving Linear and non-linear partial differential equation	3	Procedural
2	Apply the method of separation of variables to solve	3	Procedural
	Heat, wave, Laplace equations and Transmission line		
3	Evaluate moments, skewness, kurtosis and moment	5	Procedural
	generating function and linear and non linear		
4	Solve probability problems apply Binomial, Poission's	3	Conceptual,
	and Normal distribution including sampling theory		Procedural
	along with test of significance		
5	Analyze statistical data samples, hypothesis testing	4	Conceptual,
	and control chart.		Procedural

			Mapp	oing of	Cours	e outco	omes w	ith Pro	ogram	Outcon	nes			
Course:														
										PO	PO	PO		
PO	<b>PO1</b>	PO2	PO3	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	10	11	12	PSO1	PSO2
CO1	3	2	1	2	3	3	1	-	-	2	3	2	2	_
CO2	3	1	1	2	3	2	1	-	-	1	3	2	2	_
CO3	3	3	2	2	3	3	1	-	-	2	3	2	1	2
CO4	3	2	1	2	3	3	1	-	-	2	3	2	1	1
CO5	3	2	1	3	3	3	1	-	-	3	3	3	2	_
Target													1.6	1.5
Level	3	2	1.2	2.2	3	2.8	1			2	3	2.2		

Sem: S.No	Course Outcomes		
Stude	ents will be able to	Bloom Level	Knowledge Dimension
1	Analyze the nature and objective of Technical Communication relevant for the workplace as Engineers.	BL 4 (Analyze)	K1, K2
2	Utilize the technical writing for the purposes of Technical Communication and its exposure in various dimensions.	BL 3 (Apply)	K2, K3
3	Imbibe presentation strategies inputs by presentation skills to enhance confidence in facing diverse audience in required situations at workplace.	BL 3 (Apply)	K2, K3, K4
4	Analyze the application of the technical communication to promote their competence for various media like Report generation, Resume design, GD and Interview etc.	BL 5 (Evaluate)	K4
5	Evaluate voice-dynamics and select appropriate cues for their own efficacy as fluent & efficient communicators.	BL 5 (Evaluate)	K2, K3

	Mapping of Course outcomes with Program Outcomes													
Course:	DO1	DOA	DOA	PO 4	DO.	PO(	DOF	POO	DOG	<b>DO 10</b>	<b>DO 11</b>	<b>DO 10</b>	<b>D</b> CO1	DCOA
PO	POI	PO2	PO3	PO4	P05	PO6	<b>PO</b> 7	P08	PO9	PO 10	POII	PO 12	PSOI	<b>PSO2</b>
CO1									2	3		3		
CO2									2	3		3		
CO3									2	3		3		
CO4									2	3		3		
CO5									2	3		3		
Target														
Level									2	3		3		

Cours Sem:	Course Name/code:Electronic Devices (KEC-301)Session:2022-23Sem:III Odd Semester										
S.No	Course Outcomes										
Stude	nts will be able to	Bloom	Knowledge								
		Level	Dimension								
1	Understand the concepts of semiconductor physics to formulate Energy band gap.	2	Conceptual, Procedural								
2	Understand Energy band gap diagram and mathematical model of semiconductor junctions	2	Conceptual, Procedural								
3	Apply the concept of Carrier transport in semiconductors.	3	Conceptual, Procedural								
4	Apply the mathematical model of MOS transistor for realizing electronic circuits.	3	Conceptual, Procedural.								
5	Understand the mathematical model and working of special purpose diodes.	2	Conceptual, Procedural								

Mapping of Course outcomes with Program Outcomes														
Course:														
РО	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2
CO1	3	3		1					2				1	-
CO2	3	3		1					2			2	-	-
CO3	3	3		1					2			3	-	-
CO4	3	3		1					2			3	2	-
CO5	3	3		1					2			3	2	-
Target									2				1.67	-
Level	3	3		1								2.75		

Course Name/code: Digital System Design/ KEC302 Session:2022-23									
Sem	: III Odd Semester								
S.	Course Outcomes								
No									
Stud	ents will be able to	Bloom	Knowledge						
		Level	Dimension						
1	Apply the basics in Digital electronics	3	Conceptual,						
			Procedural						
2	Design Combinational Logic Circuits.	6	Conceptual,						
			Procedural						
3	Design synchronous sequential logic circuits	6	Conceptual,						
			Procedural						
4	Analyze various logic families.	4	Conceptual,						
5	Apply the knowledge of DAC and ADC in the circuits.	3	Conceptual,						

	Mapping of Course outcomes with Program Outcomes													
Course:														
										PO	PO	PO		
PO	<b>PO1</b>	<b>PO2</b>	PO3	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	10	11	12	PSO1	PSO2
CO1	3	3	2	2	1	1							-	-
CO2	3	3	2	2	1	1							2	-
CO3	3	3	2	2	1	1							2	-
CO4	3	3	2	2	1	1							-	-
CO5	3	3	2	2	1	1							2	-
Target													1.2	-
Level	3	3	2	2	1	1								

Cours	se Name/code: Network Analysis and Synthesis/ KEC30	3	Session: 2022-23
S.No	Course Outcomes		
	Students will be able to	Bloom Level	Knowledge Dimension
1	Understand basics electrical circuits with nodal and mesh analysis.	2	Conceptual, Factual
2	Apply network theorems on electrical circuit.	3	Conceptual, Factual
3	Analyse electrical circuits using Fourier series and transform.	4	Conceptual
4	Analyse steady state and transient state using Laplace Transform.	4	Conceptual
5	Analysis of various parameter for two port network and filter.	4	Conceptual

	Mapping of Course outcomes with Program Outcomes													
a														
Course:														
PO	<b>PO1</b>	PO2	PO3	<b>PO4</b>	PO5	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO 10</b>	<b>PO 11</b>	<b>PO 12</b>	PSO1	PSO2
CO1	3	3	2	2	3	-	-	-	-	-	-	1	2	
CO2	2	2	3	3	2	-	-	-	-	-	-	1	2	1
CO3	2	3	3	3	3	-	-	-	-	-	-	-	1	-
<b>CO4</b>	3	3	3	2	2	-	-	-	-	-	-	-	1	1
CO5	3	2	2	3	3	-	-	-	-	-	-	1	2	
Target													1.6	1
Level	2.6	2.6	2.6	2.6	2.6	-	-	-	-	-	-	1		

Course Name/code: Electronics Devices Lab/KEC-351 Session:2022-2									
S.No	Course Outcomes								
Stude	ents will be able to	Bloom Level	Knowledge Dimension						
1	Understand working of basic electronics lab equipment.	2	Conceptual,						
2	Understand working of PN junction diode and demonstrate of its applications.	3	Conceptual						
3	Understand characteristics of Zener diode.	2	Procedural						
4	Design a voltage regulator using Zener diode.	4	Conceptual						
5	Understand working of BJT, FET, MOSFET and apply the concept in designing of amplifiers.	3	Conceptual						

	Mapping of Course outcomes with Program Outcomes													
Course:														
PO	<b>PO1</b>	PO2	PO3	<b>PO4</b>	PO5	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	PO 10	PO11	PO12	PSO1	PSO2
CO1	2	1	2	2	1	1	-	-	-	-	-	1	3	-
CO2	3	2	3	2	2	1	-	-	-	-	-	1	3	-
CO3	2	2	3	2	2	1	-	-	-	-	-	1	3	-
CO4	3	2	3	2	2	1	-	-	-	-	-	1	3	-
CO5	3	2	2	3	2	1	-	-	-	-	-	1	3	-
Target														
Level	2.6	1.8	2.6	2.2	1.8	1	-	-	-	-	-	1	3	-

Cou Sem	rse Name/code: Digital System Design Lab/ KEC352 : III Odd Semester		Session:2022-23			
S. No	Course Outcomes					
Stuc	lents will be able to	Bloom Level	Knowledge Dimension			
1	Apply the basics of digital electronics to hardware.	3	Conceptual, Procedural			
2	Verify the truth table of different flip flops using hardware.	5	Conceptual, Procedural			
3	Design combinational logic circuits using hardware.	6	Conceptual, Procedural			
4	Design sequential logic circuits using hardware.	6	Conceptual,			
5	Design mini project using digital ICs.	6	Conceptual,			

	Mapping of Course outcomes with Program Outcomes													
Course:														
										PO	PO	PO		
PO	<b>PO1</b>	PO2	<b>PO3</b>	<b>PO4</b>	PO5	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	10	11	12	PSO1	PSO2
CO1	3	3	2	2	1	1							-	-
CO2	3	3	2	2	1	1							2	H
CO3	3	3	2	2	1	1							2	-
CO4	3	3	2	2	1	1							-	-
CO5	3	3	2	2	1	1							2	-
Target													1.2	-
Level	3	3	2	2	1	1								

Course Name/code:	Networks	Analysis	and	Synthesis	(KEC-353)	Session:2022-23
Sem: III Odd Semeste	er	-		-		

S.No	Course Outcomes		
Stude	nts will be able to	Bloom	Knowledge
		Level	Dimension
1	Understand basics of electrical circuits with nodal and mesh analysis.	2	Conceptual
2	Analyze electrical network theorems.	4	Procedural
3	Analyze RLC circuits.	4	Procedural
4	Analyze the stability of an electrical circuit.	4	Procedural
5	Apply the network analysis to design network filters.	4	Procedural

	Mapping of Course outcomes with Program Outcomes														
Course:															
										PO	PO	PO			
PO	<b>PO1</b>	PO2	PO3	PO4	PO5	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	10	11	12	PSO1	PSO2	
CO1	3	2	1	2	3	-	-	-	1	2	-	1	1	-	
CO2	3	2	1	2	3	-	-	-	1	2	-	1	1	-	
CO3	3	2	1	2	3	-	-	-	1	2	-	1	2	-	
CO4	3	2	1	2	3	-	-	-	1	2	-	1	2	-	
CO5	3	2	1	2	3	-	-	-	1	2	-	1	-	-	
Target															
Level	3	2	1	2	3			-	1	2	-	1	1.5	-	

Course	Name/code : Mini Project/Internship/ KEC-354		Session:2022-23		
Sem: II S.No	Course Outcomes				
Student	ts will be able to	Bloom Level	Knowledge Dimension		
1	Analyze the real-life-working environment & practices followed in the industry.	4	Factual		
2	Critically examine the Idea behind the job undertaken with detailed analysis.	4	Conceptual		
3	Identify the mechanism behind job management with importance of the spirit of team working.	4	Factual		
4	Successfully complete the MOOC courses.	2	Factual		
5	Analyze the Research papers from Nalanda econsortium.	4	Factual		

	Mapping of Course outcomes with Program Outcomes														
Course:															CO wise
										PO	PO	PO			Target
PO	PO1	PO2	PO3	<b>PO4</b>	PO5	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	PO9	10	11	12	PSO1	PSO2	Level
CO1	-	2	-	2	-	2	-	-	2	2	-	1	-	-	
CO2	-	-	-	2	-	2	-	-	2	2	2	1	-	-	
CO3	-	-	-	2	-	2	-	-	2	2	2	1	-	-	
CO4	-	-	-	-	-	-	-	-	-	-	-	1	-	-	
CO5	-	-	-	2	-	-	-	-	-	1	-	1	-	-	
Target															
Level	-	2	-	2	-	2	-	-	2	1.75	2	1	-	-	

Cours Sem:	Course Name/code:Integrated Circuits (KEC-501)Session:2022-23Sem: V Odd Semester											
S.No	Course Outcomes											
Stude	ents will be able to	Bloom Level	Knowledge Dimension									
1	Analyze complete internal analysis of Op-amp 741-IC	4	Conceptual, Procedural									
2	Examine Op-amp based circuits & basic components of ICs such as various types of filters	4	Conceptual, Procedural, Fundamental Design Principles									
3	Implement the concept of Op-Amp to design Op-amp based non - linear applications and wave shaping circuits	3	Conceptual, Procedural									
4	Analyze basic digital IC circuits using CMOS technology	4	Conceptual, Procedural, Fundamental Design Principles									
5	Analyze the functioning of application specific ICs such as 555 timer, VCO IC 566 and PLL.	4	Conceptual, Procedural									

	Mapping of Course outcomes with Program Outcomes														
Course:															
РО	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2	
CO1	3	3	2	1	1	-	-	-	2	1	-	1	1	1	
CO2	3	3	2	1	1	-	-	-	1	2	-	1	1	1	
CO3	3	3	2	1	1	-	-	-	1	1	-	1	1	1	
CO4	3	3	2	1	1	-	-	-	1	1	-	1	1	1	
CO5	3	3	2	1	1	-	-	-	1	1	-	1	1	1	
Target															
Level	3	3	2	1	1				1.2	1.2		1	1	1	

Cours Sem:	se Name/code: Microprocessors and Microcontroller V Odd Semester (KEC 502)	rs	Session:2022-23		
S.No	Course Outcomes				
Stude	ents will be able to	Bloom Level	Knowledge Dimension		
1	Understand the basic architecture of 8085 and interfacing devices	2	Conceptual		
2	Apply the programming model of 8085 to write programs	3	Conceptual, Procedural		
3	Understand the basic architecture of 8086 and different peripheral Devices	2	Conceptual		
4	Understand the architecture of 8051 microcontroller	2	Conceptual		
5	Understand the assembly programming to program interrupts, timers, serial ports in 8051	2	Conceptual		

	Mapping of Course outcomes with Program Outcomes														
Course															
:															
										Р	Р	Р			
	PO	PO	PO	PO	PO	PO	PO	PO	PO	0	0	0	PSO	PSO	
PO	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO1	1	1	2	3	1	1	-	-	-	-	-	1	-	-	
CO2	2	2	3	2	3	1	-	-	-	-	-	1	-	-	
CO3	1	1	1	1	1	1	-	-	-	-	-	1	-	-	
<b>CO4</b>	1	1	2	2	2	1	-	-	-	-	-	1	-	-	
CO5	2	3	3	3	3	2	-	-	-	-	-	1	-	-	
Target															
Level	1.4	1.6	2.2	2.2	2	1.2						1			

Cou Sem	rse Name/code: Digital Signal Processing/ KEC-503 : V Odd Semester	Session:2022					
S.	Course Outcomes						
No Stud	lents will be able to	Bloom	Knowledge				
		Level	Dimension				
1	Design different types of realizations of digital systems (IIR and FIR) and their utilities	3	Conceptual, Procedural				
2	Design of digital IIR filters.	6	Conceptual, Procedural				
3	Design of digital FIR filters.	6	Conceptual, Procedural				
4	Compute DFT, FFT & its Inverse transform.	4	Conceptual, Procedural				
5	Implement Decimation & Interpolation with its applications.	3	Conceptual, Procedural				

	Mapping of Course outcomes with Program Outcomes														
Course:															
										PO	PO	PO			
PO	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	10	11	12	PSO1	PSO2	
CO1	3	3	2	2	1	1	-	-	-		1		-	-	
CO2	3	3	2	3	1	1	-	-	-				1	-	
CO3	2	2	2	2	2	1	-	-	-				2	-	
CO4	3	3	2	3	1	3	-	-	-		2		-	-	
CO5	1	3	2	2	1	1	-	-	-				3	-	
Target													12	-	
Level	2.4	2.8	2	2.4	1.2	1.4	-	-	-		1.5				

Cours Sem:	se Name/code: VLSI Technology/ KEC-053 V Odd Semester		Session:2022-23			
S.No	Course Outcomes					
Stude	ents will be able to	Bloom Level	Knowledge Dimension			
1	Understand the basics of crystal growth, wafer preparation, wafer cleaning and corelate it with SSI, MSI, LSI and VLSI.	2	Factual			
2	Analyze the epitaxy and oxidation process.	4	Conceptual			
3	Analyze the lithography, etching and deposition process.	4	Conceptual			
4	Analyze the process of diffusion and ion implantation process.	4	Conceptual			
5	Outline the basic process involved in metallization and packaging.	4	Conceptual			

	Mapping of Course outcomes with Program Outcomes														
Course															
:															
										Р	Р	Р			
	PO	PO	PO	PO	PO	PO	PO	PO	PO	0	0	0	PSO	PSO	
PO	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO1	2	2	1	2	1	-	-	-	-	-	-	2	2	2	
CO2	3	2	1	2	1	-	-	-	-	-	-	2	2	-	
CO3	2	2	1	2	1	-	-	-	-	-	-	2	-	2	
CO4	3	2	1	2	1	-	-	-	-	-	-	2	1	2	
CO5	2	2	1	2	1	-	-	-	-	-	-	2	1	-	
Target															
Level	2.4	2	1	2	1		-	-	-	-	-	2	1.5	2	

Cours Sem:	se Name/code : Electronic Switching/KEC-055 V ODD Semester		Session:2022-23		
S.No	Course Outcomes				
Stude	nts will be able to	Bloom Level	Knowledge Dimension		
1	Understand fundamentals of telecommunication systems and associated technologies.	understand	Factual, Conceptual, Fundamental Design Principles		
2	Analyze Digital Switching in multidimensional space.	Analyze	Conceptual, Procedural		
3	Analyze different parameter for improvement of switching system in tele communication.	Analyze	Factual, Conceptual, Fundamental Design Principles		
4	Analyze the principles of the internal design and operation of telecommunication switches, and the essence of the key signalling systems.	Analyze	Conceptual, Procedural		
5	Apply signalling system in application of tele communication as Packet switching and ATM.	Apply	Conceptual, Procedural		

	Mapping of Course outcomes with Program Outcomes														
Course:															
										PO	PO	PO			
PO	<b>PO1</b>	PO2	PO3	<b>PO4</b>	PO5	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	10	11	12	PSO1	PSO2	
CO1	1	-	-	2	-	1	-	-			-	1	1	1	
CO2	1	2	1	-	-	1	-	-			1	1	2	2	
CO3	2	3	2	3	1	2	-	-			1	2	2	2	
CO4	2	2	2	3	1	2	-	-			2	2	2	2	
CO5	2	2	3	3	2	3	-	-			2	2	3	3	
Target															
Level	1.6	2.25	2	2.75	1.33	1.8	-	-			1.5	1.6	2	2	

se Name/code: Optical Communication (KEC 058), 5, Odd Semester		Session:2022-23,			
Course Outcomes					
nts will be able to	Bloom	Knowledge			
	Level	Dimension			
Analyze the basic concepts of optical fiber	BL-4	Conceptual			
communication along with ray propagation.					
Apply the knowledge of basic optical communication to	BL-3	Factual,			
understand the losses in an optical Fiber.		Conceptual			
Analyze the structure, working principle and parameters	BL-3	Conceptual			
of optical sources.					
Analyze the structure, working principle and parameters	BL-5	Conceptual			
of optical detectors.					
Integrate knowledge of optical communication systems	BL-5	Conceptual,			
to analyze the optical receivers structure and		Procedural			
performance.					
	e Name/code: Optical Communication (KEC 058),   5, Odd Semester   Course Outcomes   nts will be able to   Analyze the basic concepts of optical fiber   communication along with ray propagation.   Apply the knowledge of basic optical communication to   understand the losses in an optical Fiber.   Analyze the structure, working principle and parameters   of optical sources.   Analyze the structure, working principle and parameters   of optical detectors.   Integrate knowledge of optical communication systems   to analyze the optical receivers structure and   performance.	e Name/code: Optical Communication (KEC 058), 5, Odd Semester Course OutcomesInts will be able toBloom LevelAnalyze the basic concepts of optical fiber 			

	Mapping of Course outcomes with Program Outcomes														
Course:															
										PO	PO	PO			
PO	<b>PO1</b>	<b>PO2</b>	PO3	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	10	11	12	PSO1	PSO2	
CO1	3	3	2	1	1	-	-	-	-	1	-	1	1	2	
CO2	3	3	3	1	2	-	-	-	-	2	-	1	2	3	
CO3	3	3	2	2	1	-	-	-	-	1	-	1	2	3	
<b>CO4</b>	3	3	3	1	2	-	-	-	-	2	-	1	3	3	
CO5	3	2	1	2	1	-	-	-	-	1	-	1	2	3	
Target															
Level	3	2.8	2.4	1.4	1.4	-	-	-	-	1.4	-	1	2	2.8	

Cours Sem:	se Name/code: Integrated Circuit Lab (KEC-551) V Odd Semester		Session:2022-23
S.No	Course Outcomes		
Stude	ents will be able to	Bloom Level	Knowledge Dimension
1	Demonstrate different non-linear applications of operational amplifiers such as log, antilog amplifiers and voltage comparators.	3	Factual
2	Analyze different linear applications of operational amplifiers such as filters.	4	Procedural
3	Demonstrate the function of waveforms generator using op-Amp.	3	Procedural
4	Analyze multivibrator and oscillator circuits using IC555 and IC566 and perform measurements of frequency and time.	4	Procedural
5	Demonstrate the Schmitt trigger, Voltage Controlled Oscillator and Ramp generator based on IC555 and IC566.	3	Factual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course														
:														
										Р	Р	Р		
	PO	0	0	0	PSO	PSO								
PO	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	1	2	3	-	-	-	1	2	-	1	1	-
CO2	3	2	1	2	3	-	-	-	1	2	-	1	2	-
CO3	3	2	1	2	3	-	-	-	1	2	-	1	2	1
<b>CO4</b>	3	2	1	2	3	-	-	-	1	2	-	1	3	2
CO5	3	2	1	2	3	-	-	-	1	2	-	1	3	1
Target														
Level	3	2	1	2	3			-	1	2	-	1	2.2	1.3

Course Name/code: Microprocessor & Microcontroller Lab (KEC-552) Session:2022-23 Sem: V Odd Semester

S. No	Course Outcomes		
Stuc	lents will be able to	Bloom Level	Knowledge Dimension
1	Use techniques, skills, modern engineering tools, instrumentation and software/hardware appropriately to list and demonstrate arithmetic and logical operations on 8-bit data using microprocessor 8085.	Remember, understand	Conceptual
2	Examine 8085 & 8086 microprocessor and its interfacing with peripheral devices.	Analyze	Conceptual
3	State various conversion techniques using 8085 & 8086 and generate waveforms using 8085.	Apply	Conceptual, Procedural
4	Implement programming concept of 8051 Microcontroller.	Apply	Conceptual, Procedural
5	Design concepts to Interface peripheral devices with Microcontroller so as to design Microcontroller based projects.	Create	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
РО	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2
CO1	2	2	1	2	2						2	2	2	-
CO2	2	2	1	3	3						2	2	-	-
CO3	2	2		3	3						2	2	-	3
CO4	2	2	1	3	3						2	2	3	-
CO5	2	2	1	3	3		2				3	3	3	-
Target Level	2	2	1	2.8	2.8		2				2.2	2.2	2.6	3

Cou Sem	rse Name/code: Digital Signal Processing (DSP) Lab/ KI : V ODD Semester	EC-553	Session:2022-23
S.	Course Outcomes		
N0 Stud	ents will be able to	Bloom	Knowledge
Stud		Level	Dimension
1	Create and visualize various discrete/digital signals using MATLAB/Scilab.	3	Conceptual, Procedural
2	Implement and test the basic operations of Signal processing	6	Conceptual, Procedural
3	Examine and analyse the spectral parameters of window functions	6	Conceptual, Procedural
4	Design IIR and FIR filters for band pass, band stop, low pass and high pass filters.	4	Conceptual, Procedural
5	Design the signal processing algorithms using MATLAB/Scilab.	3	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
РО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2
CO1	2	2	1	1	1	1	-	-	-	2	1			
CO2	3	1	2	2	3	2	-	-	-		1	1	1	1
CO3	2	2	3	1	2	1	-	-	-		2			
CO4	1	3	2	3	1	3	-	-	-	1	1	3	2	1
CO5	1	1	1	2	2	2	-	-	-	2	1	1	3	
Target Level	1.8	1.8	1.8	1.8	1.8	1.8	_	_	_	1.6	1.2	1.6	2	1

Cours Sem:	se Name/code : Mini Project/Internship/ KEC-554 Odd Semester		Session:2022-23		
S.No	Course Outcomes				
Stude	ents will be able to	Bloom	Knowledge		
		Level	Dimension		
1	Analyze the real-life-working environment & practices followed in the Industry.	4	Factual		
2	Critically examine the Idea behind the job undertaken with detailed analysis.	4	Conceptual		
3	Identify the mechanism behind job management with importance of the spirit of team working.	4	Factual		
4	Successfully complete the MOOC courses.	2	Factual		
5	Analyze the Research papers from Nalanda econsortium.	4	Factual		

	Mapping of Course outcomes with Program Outcomes														
Course:															
				_						PO	PO	PO			
PO	<b>PO1</b>	PO2	PO3	<b>PO4</b>	PO5	<b>PO6</b>	<b>PO7</b>	PO8	<b>PO9</b>	10	11	12	PSO1	PSO2	
CO1	-	2	-	2	-	2	-	-	2	2	-	1	-	-	
CO2	-	-	-	2	-	2	-	-	2	2	2	1	-	-	
CO3	-	-	-	2	-	2	-	-	2	2	2	1	-	-	
CO4	-	-	-	-	-	-	-	-	-	-	-	1	-	-	
CO5	-	-	-	2	-	-	-	-	-	1	-	1	-	-	
Target															
Level	-	2	-	2	-	2	-	-	2	1.75	2	1	-	-	

Course Name/code: Indian Tradition, Culture and Society (KNC 502) Session:2022-23 Sem: V ODD SEM.

S.N	0						CO	URSE	E OUT	COME	E						
Stud	lents	will be	e able (	to					· · · · ·	BL LE	VEL			Know Dime	vledge ension		
СО	1	Identif conterr and try challen	y the ro porary to loca ges by	oots and issues ate pos diggin	d detail s faced sible so g deep	ls of so l by o olution into o	me of t ur nati s to the ur past.	the on ese		2			Ţ	Remembering Understanding			
СО	2	Unders surrour contrib develog	stand ndings oute pment.	the and en- tow	import courag /ards	ance e the st st	of c tudents istainal	our to ole		1			τ	Understanding Applying			
СО	3	Make a science literatu society advanc	aware of e and y re that y with ements	of holis wisdon t are ith s and so	tic life n caps import rapid ocietal	styles of ules in tant in tech disrupt	of Yog Sansk mode nologie ions.	ic- crit ern cal	1					olying,	Analyz	zing	
СО	4	Sensiti culture charact	ze tow , trac ter.	ards iss lition	sues read	lated to its c	oʻIndia compos	an' ite		3			App	.pplying, Analyzing			
СО	5	Acquai Indian worldv holistic	int with persp iew an c health	h India ective d basic n care s	n Kno of mo princij ystem.	wledge odern ples of	e Syste scienti Yoga a	m, fic nd		4 Evalu Crea					ating		
		PO   PO<		PO -6	PO-7	PO-8	PO-9	PO- 10	PO- 11	PO- 12	PSO 1	PSO 2					
	С	CO-1		2				2		1							
	С	0-2						2				2		1			
·	C	0-3						2				2		1			
·	C	0-4						2				2		1			
·	C	0-5						2				2		1			
	Ta Le	arget evel						2				2		1			

Cours	se Name/code: PM&E/ KHU 701		Session: 2022-23			
Sem:	ODD Semester					
S.No	Course Outcomes					
Stude	ents will be able to	Bloom Level	Knowledge Dimension			
1	Understand the theories of entrepreneurship and Entrepreneurial Development Programmes.	2	Factual			
2	Create and exploit innovative business ideas and market opportunities.	5	Conceptual, Procedural			
3	Understand the importance of Project Management and Project's life cycle	2	Factual, Conceptual			
4	Analyze Project Finance and project report.	4	Conceptual, Procedural			
5	Analyze Social Sector Perspectives and Social Entrepreneurship.	4	Conceptual, Procedural			

	Mapping of Course outcomes with Program Outcomes														
Course:															
										PO	PO	PO			
PO	<b>PO1</b>	<b>PO2</b>	PO3	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	10	11	12	PSO1	PSO2	
CO1	-	-	-	-	-	1	1	2	2	-	3	1	-	-	
CO2	-	-	-	-	-	2	2	3	3	-	3	2	-	_	
CO3	-	-	-	-	-	3	3	2	3	-	3	2	-	-	
<b>CO4</b>	-	-	-	-	-	2	3	2	3	-	3	2	-	-	
CO5	-	-	-	-	-	2	3	3	2	-	3	3	-	-	
Target															
Level	-	-	-	-	-	2	2.4	2.4	2.6	-	3	2	-	-	

Cours	se Name/code: VLSI DESIGN/ KEC 072		Session:2022-23
Sem:	Odd Semester		
S.No	Course Outcomes		
Stude	nts will be able to	Bloom	Knowledge
		Level	Dimension
1	Understand the basics of CMOS logic circuits and various steps involved in the design of Integrated circuits	2	Conceptual & Procedural
2	Analyze delay models, logical effort of path and various types of power dissipation	4	Conceptual & Procedural
3	Analyze the concept of Dynamic, Domino CMOS logic	4	Conceptual & Procedural
4	Analyze power logic circuits and different semiconductor memories used in present day technology.	4	Conceptual & Procedural
5	Analyze faults in digital circuits, Fault Models and various Testing Methodologies.	4	Conceptual & Procedural

	Mapping of Course outcomes with Program Outcomes														
Cour se:															
РО	P 01	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS 01	PS O2	
CO1	2	2	2	2	2	-	-	-	-	1	1	1	3	-	
CO2	3	3	2	2	3	-	-	-	-	1	1	1	3	-	
CO3	2	2	2	2	2	-	-	-	-	1	1	1	3	-	
<b>CO4</b>	2	2	2	2	2	-	-	-	-	1	1	1	3	-	
CO5	3	3	2	2	3	-	-	-	-	1	1	1	3	-	
Targ															
et	2.	2.			2.										
Level	4	4	2	2	4	-	-	-	-	1	1	1	3	-	

Course Name/code: Wireless & Mobile Communication/KEC076 Session:2022-23									
Sem:	VII ODD Semester								
S.No	Course Outcomes								
Stude	nts will be able to	Bloom	Knowledge						
		Level	Dimension						
1	Understand the cellular concept to get insight of mobile radio communication and its evolution.	2	Conceptual						
2	Analyse the working of vocoders and spread spectrum modulation for mobile radio communication.	4	Conceptual						
3	Analyse the Equalization techniques of noise rejection and various multiple access techniques.	4	Conceptual, Procedural						
4	Understand the various 2g and 3g standards of mobile communication with proper block diagram.	2	Conceptual, procedural						
5	Apply the basic concepts of mobile communication to get insight of networking in mobile communication.	3	Conceptual						

	Mapping of Course outcomes with Program Outcomes														
Course:															
РО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2	
CO1	3	3	2	1	1	-	-	-	-	1	-	1	1	2	
CO2	3	3	3	1	1	-	-	-	-	1	-	1	2	3	
CO3	3	3	2	2	2	-	-	-	-	1	-	1	2	3	
CO4	3	3	3	3	3	-	-	-	-	2	-	2	3	3	
CO5	3	2	1	2	1	2	-	-	-	1	-	2	2	3	
Target Level	3	2.8	2.2	1.8	1.6	2	-	-	-	1.2	-	1.4	2	2.8	

Cou Sem	rse Name/code : MACHINE LEARNING / KOE-073 :VII ODD Semester		Session:2022-23
S.	Course Outcomes		
Stud	lents will be able to	Bloom Level	Knowledge Dimension
1	Understand fundamentals of Well-defined learning problems and Designing a Learning System.	understand	Factual, Conceptual, Fundamental Design Principles
2	Analysis of Decision tree learning algorithm and Artificial Neural Networks.	Analyze	Conceptual, Procedural
3	Analyze different parameter for Estimating Hypotheses Accuracy and Bayesian belief networks.	Analyze	Factual, Conceptual, Fundamental Design Principles
4	Analyze the principles of Computational Learning Theory and Instance-Based Learning.	Analyze	Conceptual, Procedural
5	Apply Genetic Algorithms for Hypothesis space search and Genetic Programming.	Apply	Conceptual, Procedural

	Mapping of Course outcomes with Program Outcomes														
Cours															
e:															
										Р	P	Р			
	PO	PO	PO	PO	PO	PO	PO	PO	PO	0	0	0	PSO	PSO	
PO	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO1	1	-	-	2	-	1	-	-	3	1	-	2	1	1	
CO2	1	2	1	-	-	1	-	-	2	2	1	2	2	2	
CO3	2	3	2	3	1	2	-	-	2	2	1	2	2	2	
CO4	2	2	2	3	1	2	-	-	2	2	2	2	2	2	
CO5	2	2	3	3	2	3	-	-	3	2	2	3	3	3	
Targe															
t		2.2		2.7						1.	1.	2.			
Level	1.6	5	2	5	1.3	1.8	0	0	2.4	8	5	2	2	2	

Course Name / Code: Information Theory and Coding / KEC-	)75

Session: 2022-23

Sem:	VII ODD Semester		
S. No	Course Outcomes		
Stud	ents will be able to	Bloom Level	Knowledge Dimension
1	Evaluate the fundamentals of information theory and basics of communication systems.	6	Conceptual, Procedural
2	Understand the mathematical fundamentals to solve engineering problems in digital communications.	6	Conceptual, Procedural
3	Evaluate the concepts of information theory, channel coding and source coding and to optimize the channel performance.	6	Conceptual, Procedural
4	Analyse the mathematical functions on multi – disciplinary teams through projects.	6	Conceptual, Procedural
5	Evaluate applications of digital communication system using different error control techniques within realistic constraints.	6	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes														
Course:														
РО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2
CO1	2	3	1	3	2	-	-	-	-	-	-	1	-	-
CO2	3	2	1	2	2	-	2	-	-	-	-	1	-	-
CO3	2	3	2	3	3	-	-	-	-	-	-	1	-	-
CO4	1	1	2	3	2	-	2	3	-	-	-	1	-	-
CO5	1	1	3	1	1	2	3	1	2	1	2	2	-	-
Target Level	1.8	2	1.8	2.4	2	2	2.4	2	2	1	2	1.2	-	-

Course Name / Code: Vision for Humane Society / KOE-076

Session: 2022-23

Sem: V	VII Semester		
S. No	Course Outcomes		
Stude	nts will be able to	Bloom Level	Knowledge Dimension
1	Understand the essential complementarily between 'VALUES" and 'SKILLS'.	2	Factual
2	Understand how to ensure sustained happiness and prosperity.	2	Factual, Conceptual
3	Apply understanding of values and human reality to develop a holistic perspective towards life, and profession.	3	Conceptual, Procedural
4	Analyze harmony in nature and existence, and work out their mutually fulfilling participation in the nature.	4	Conceptual, Procedural
5	Analyze ethical and unethical practices to actualize a harmonious environment wherever they work.	4	Conceptual, Procedural

Mapping	Vapping of Course outcomes with Program Outcomes														
Course:															
РО	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2	
CO1	-	-	-	-	-	1	1	2	2	-	-	3	-	-	
CO2	-	-	-	-	-	2	2	3	3	-	-	3	-	-	
CO3	-	-	-	-	-	3	3	2	3	-	-	3	-	-	
CO4	-	-	-	-	-	2	3	2	3	-	-	3	-	-	
CO5	-	-	-	-	-	2	3	3	2	-	-	3	-	-	
Target Level	-	-	-	-	-	2	2.4	2.4	2.6	-	-	3	-	-	

Cours Sem:	se Name/code: VLSI DESIGN Lab/ KEC 751 B Odd Semester		Session:2022-23
S.No	Course Outcomes		
Stude	ents will be able to	Bloom Level	Knowledge Dimension
1	Design logic gates.	6	Conceptual & Procedural
2	Implement combinational and sequential circuits using CMOS logic.	4	Conceptual & Procedural
3	Analyze amplifier circuits.	4	Conceptual & Procedural
4	Design sequential circuits such as flip flop	6	Conceptual & Procedural
5	Do the layout designing for physical analysis of the MOS transistor and MOS based circuits.	6	Conceptual & Procedural

		Μ	lappir	ng of (	Cours	e outo	omes	with	Progr	am Ou	tcomes			
Course:														
	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PS	PS
PO	1	2	3	4	5	6	7	8	9	10	11	12	01	02
CO1	2	2	2	2	2	-	-	-	-	1	1	1	2	-
CO2	3	3	2	2	3	-	-	-	-	1	1	1	3	-
CO3	2	2	2	2	2	-	-	-	-	1	1	1	3	-
<b>CO4</b>	2	2	2	2	2	-	-	-	-	1	1	1	3	-
CO5	3	3	2	2	3	-	-	-	-	1	1	1	3	-
Target	2.	2.			2.									
Level	4	4	2	2	4	-	-	-	-	1	1	1	2.8	-

# Course Name / Code: Project I/ KEC-753

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Sem: `	VII ODD Semester		
S. No	Course Outcomes		
Stude	nts will be able to	Bloom Level	Knowledge Dimension
1	Identify the problem for the project and find the appropriate solution which is practically feasible.	1	Conceptual, Procedural
1	Apply the knowledge of Electronics, Programming and Communication Engineering to analyze and design the project	3	Conceptual, Procedural
3	Use the techniques, skills, and modern engineering tools such as logic works, VHDL, Cadence, MAT Lab for implementation and completion of project.	3	Conceptual, Procedural
4	Function on multi-disciplinary teams through effective communication skill and team behavior.	5	Conceptual, Procedural
5	Accomplish the project to meet desired needs within realistic constraints of environment, economy, and manufacturability	6	Conceptual, Procedural

Mapping	Mapping of Course outcomes with Program Outcomes														
Course:															
РО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2	
CO1	2	3	3	2	-	-	-	3	-	-	1	-	2	2	
CO2	1	3	2	-	1	2	2	1	3	2	3	1	2	1	
CO3	2	2	3	1	2	2	2	-	3	-	-	3	2	3	
CO4	-	3	2	3	2	1	1	-	2	2	2	2	-	3	
CO5	3	3	3	2	3	2	2	2	1	-	1	1	2	3	
Target Level	2	2.80	2.60	2	2	1.75	1.75	2	2.25	2	1.75	1.75	2	2.4	

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## Even Sem

# Session 2022-23

CO Statement and CO-PO Mapping

HoD

Course Session: Sem: IV	)45)		
S.No.	Course Outcomes		
Student	s will be able to	Bloom Level	Knowledge Dimension
1	Analyze the time and space complexity of an algorithm	BL-4	Conceptual, Procedural
2	Apply operations on Stack, Queue, Priority Queue, D- Queue using Array and Linked List.	BL-3	Conceptual, Procedural
3	Understand basic terminology of data representation in form of tree (Binary tree, Heap), operations on trees.	BL-2	Conceptual, Procedural
4	Understand basic terminology of Graph, types of graph, Graph traversing algorithms.	BL-2	Conceptual, Procedural
5	Implement and analyze fundamental algorithms like Searching and Sorting.	BL-4	Conceptual, Procedural

	Mapping of Course outcomes with Program Outcomes														
CO \ PO Mapping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
C01	3	3	1	2	2	-	-	-	1	-	1	2	2	2	
CO2	3	3	1	2	2	-	-	-	1	-	1	2	2	2	
CO3	2	2	1	2	2	-	-	-	1	-	1	2	2	2	
CO4	2	2	1	2	2	-	-	-	1	-	1	2	2	2	
CO5	3	3	1	3	3	-	-	-	1	-	1	2	2	2	
Target Level	2.6	2.6	1	2.2	2.2				1		1	2	2	2	

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Faculty Sign: 1. 2. 3.

HoD

Cours Sem:	se Name/code: UHV (KVE401 IV Even Semester		Session:2022-23
S.No	Course Outcomes		
Stude	nts will be able to	Bloom Level	Knowledge Dimension
1	Understand the essential complementarily between 'VALUES' and 'SKILLS'.	2	Factual
2	Understand how to ensure sustained happiness and prosperity.	2	Factual, Conceptual
3	Apply understanding of values and human reality to develop a holistic perspective towards life, and profession.	3	Conceptual, Procedural
4	Analyze harmony in nature and existence, and work out their mutually fulfilling participation in the nature.	4	Conceptual, Procedural
5	Analyze ethical and unethical practices to actualize a harmonious environment wherever they work.	4	Conceptual, Procedural

	Mapping of Course outcomes with Program Outcomes														
Course:															
РО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2	
CO1						1	1	2	2	-	-	3			
CO2						2	2	3	3	-	-	3			
CO3						3	3	2	3	-	-	3			
CO4						2	3	2	3	-	-	3			
CO5						2	3	3	2	-	-	3			
Target															
Level						2	2.4	2.4	2.6	-	-	3			

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HoD
Cours Sem:	se Name/code: Mathematics IV (KAS-402) IV Even Semester	Session:2022-23					
S.No	Course Outcomes						
Stude	ents will be able to	Bloom Level	Knowledge Dimension				
1	Apply the methods for solving Linear and non-linear partial differential equation.	3	Procedural				
2	Apply the method of separation of variables to solve Heat, Wave, Laplace equations and Transmission line	3	Procedural				
3	Evaluate moments, skewness, kurtosis and moment generating function and linear and non linear regression.	5	Procedural				
4	To solve probability problems apply Binomial, Poission's and Normal distribution including sampling theory along with test of significance	3	Conceptual, Procedural				
5	Analyze statistical data samples , hypothesis testing and control chart .	4	Conceptual, Procedural				

			Mapp	oing of	Course	e outco	mes w	ith Pro	gram	Outcon	nes			
Course:														
РО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2
CO1	3	2	1	2	3	3	1	-	-	2	3	2	<mark>2</mark>	
CO2	3	1	1	2	3	2	1	-	-	1	3	2	<mark>2</mark>	
CO3	3	3	2	2	3	3	1	-	-	2	3	2	<mark>1</mark>	<mark>2</mark>
CO4	3	2	1	2	3	3	1	-	-	2	3	2	<mark>1</mark>	<mark>1</mark>
CO5	3	2	1	3	3	3	1	-	-	3	3	3	<mark>2</mark>	
Target													<mark>1.6</mark>	<mark>1.5</mark>
Level	3	2	1.2	2.2	3	2.8	1			2	3	2.2		

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Cou Sem	rse Name/code: Communication Engineering (KEC-401 : IV Even Semester	)	Session:2022-23
S.	Course Outcomes		
No Stud	lents will be able to	Bloom	Knowledge
biuu		Level	Dimension
1	Apply the knowledge of signals and systems for different types of amplitude modulation systems	BL-3	Factual, Conceptual
2	Analyze frequency domain analysis for angle modulation systems.	BL-4	Conceptual
3	Evaluate the impact of AWGN Additive White Gaussian Noise for different analog modulation.	BL-5	Conceptual, Procedural
4	Integrate the concept of analog to digital baseband modulation techniques.	BL-5	Conceptual, Procedural
5	Apply the concept of digital baseband transmission to relate it with bandpass transmission techniques.	BL-3	Conceptual

			Марр	ing of	Course	e outco	mes wi	ith Pro	gram	Outcon	nes			
Course:														
										PO	PO	PO		
PO	<b>PO1</b>	<b>PO2</b>	PO3	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	10	11	12	PSO1	PSO2
CO1	3	3	2	1	1	-	-	-	-	1	-	1	<mark>1</mark>	<mark>2</mark>
CO2	3	3	3	1	2	-	-	-	-	2	-	1	2	
CO3	3	3	2	2	1	-	-	-	-	1	-	1	<mark>2</mark>	
CO4	3	3	3	2	2	-	-	-	-	2	-	1		
CO5	3	2	1	1	1	-	-	-	-	1	-	1	2	
Target													<b>1.75</b>	2
Level	3	2.8	<mark>2.2</mark>	1.4	1.4	-	-	-	-	1.4	-	1		

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Faculty Sign: 1. 2. 3.

Cours Sem:	se Name/code: Analog Circuits/KEC-402 IV Even Semester		Session:2022-23
S.No	Course Outcomes		
Stude	nts will be able to	Bloom Level	Knowledge Dimension
1	Analyze various diode and amplifier circuits.	4	Conceptual & Procedural
2	Analyze various power amplifier circuits and feedback topologies	4	Conceptual & Procedural
3	Analyze sinusoidal and non-sinusoidal oscillators.	4	Conceptual & Procedural
4	Analyze Current mirror and Differential amplifier circuits	4	Conceptual & Procedural
5	Analyze Opamp based amplifiers and filters	4	Conceptual & Procedural

	Mapping of Course outcomes with Program Outcomes													
Cour														
se:														
	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PS	PS
PO	1	2	3	4	5	6	7	8	9	10	11	12	01	02
CO1	3	3	2	1	1	-	-	-	-	1	1	1	3	-
CO2	3	3	2	1	1	-	-	-	-	1	1	1	3	-
CO3	3	3	2	1	1	-	-	-	-	1	1	1	3	-
<b>CO4</b>	3	3	2	1	1	-	-	-	-	1	1	1	3	-
CO5	3	3	2	1	1	-	-	-	-	1	1	1	3	-
Targ														
et														
Level	3	3	2	1	1	-	-	-	-	1	1	1	3	

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Faculty Sign: 1. 2. 3.

Cour Som:	se Name/code: Signals and Systems/ KEC403		Session:2022-23
S.No	Course Outcomes		
Stude	ents will be able to	Bloom Level	Knowledge Dimension
-	Analyse different types of signals and systems.	4	Conceptual
2	Understand linear shift-invariant (LSI) systems and system representation through differential and difference equation.	4	Conceptual, Factual
3	Analyse continuous and discrete systems in time and frequency domain using transform domain.	4	Conceptual
4	Analyse discrete time signals in z-domain.	4	Conceptual
5	Apply sampling theorem to continuous time signal.	3	Conceptual

			Mappi	ing of (	Course	outcor	nes wi	th Prog	gram (	<b>Jutco</b>	mes			
Course:														
РО	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2
CO-	3	3	2	2	3	2	-	-	-	-	-	-		
CO2	2	2	3	3	2	1	-	-	-	-	-	1	<mark>2</mark>	
CO3	2	3	3	3	1	2	-	-	-	-	-	1	<mark>2</mark>	
CO4	3	3	3	2	2	1	-	-	-	-	-	1	<mark>2</mark>	
CO5	3	2	2	2	3	2	-	-	-	-	-	1	<mark>2</mark>	
Target	26	26	26	21	22	16						1	2	
Level	<i>∠</i> .0	<i>∠</i> .0	<i>∠</i> .0	2.4	2.2	1.0	-	-	-	-	-	1		

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Faculty Sign: 1. 2. 3.

HoD

Cou Sem	rse Name/code: Communication Engineering Lab/ KEC : IV Even Semester	-451	Session:2022-23
S.	Course Outcomes		
No Stud	lents will be able to	Bloom	Knowledge
		Level	Dimension
1	Analyze different analog modulation schemes for their modulation factor and power	3	Conceptual, Procedural
2	Study pulse amplitude modulation	6	Conceptual, Procedural
3	Analyze different digital modulation schemes to compute the bit error performance	6	Conceptual, Procedural
4	Study of Phase shift keying.	4	Conceptual, Procedural
5	Design a front end BPSK modulator and demodulator	3	Conceptual, Procedural

	Mapping of Course outcomes with Program Outcomes													
Course:														
РО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2
CO1	2	3	2		1	1	-	-	-	2	1			
CO2	3		2	2	1	1	-	-	-		1	1	2	
CO3		3	2		2	1	-	-	-		2			
CO4	1	3	2	1	1	3	-	-	-	1	1	3	1	
CO5	3		2	2	1	1	-	-	-	2	1	1	1	
Target							_	_	_					
Level	2.2	3	2	1.6	1.2	1.4	-	-	-	<b>1.6</b>	1.2	1.6	1.3	

S.No	Co	urse	Outco	mes											
Stude	ents	will b	e able	to						Bloom Leve	m l	Know Dime	ledge nsion		
1	Un	dersta	and the	charac	teristic		2		Factua	al					
2	Design and analyze various configurations of amplit circuits					ign and analyze various configurations of amp									
3	De	sign s	inusoi	dal and	non-si	nusoida	l oscill	ators.		4		Conceptual Conceptual			
4	Un OP	dersta P-AMI	and the P based	functio 1 circui	oning o ts.	f OP-A	MP and	d desig	n	4					
5	De	sign A	ADC ai	nd DAC	2.		4		Conceptual						
			Mapp	gram	Outco	mes									
e:															
										PO	PO	PO			

										PO	PO	PO		
PO	<b>PO1</b>	PO2	PO3	<b>PO4</b>	PO5	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	10	11	12	PSO1	PSO2
CO1	3	3	1	3	2	1	2	-	-	-	1	2	3	
CO2	3	2	1	3	1	2	2	-	-	-	3	3	3	
CO3	3	3	2	3	3	1	1	-	-	-	3	3	3	
<b>CO4</b>	2	3	1	2	3	1	1	-	-	-	1	3	3	
CO5	3	2	2	3	3	1	1	-	-	-	3	3	3	
Target													3	
Level	3	2.6	1.4	2.8	2.4	1.2	1.4	-	-	-	2.2	2.8		

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Cou Sem	rse Na : IV F	ame/co EVEN S	de: Sig Semest	gnal Sy er				Sess	ion:2022	2-23					
S.No				•-		Co	urse O	utcom	es						
			Stud	ents wi	ill be a	ble to				Bloo Leve	m ] el ]	Know Dime	ledge nsion		
1	Une	derstan	d the ba	asic fur	nctions	of MA	TLAB.			2		Co	nceptual Factual	,	
2	An	alyse va	arious o	operatio	ons on s	signals	using I	MATL	AB.	4		Conceptual			
3	Implement the concept of Fourier series and Fourier transforms.3											Procedural			
4	Ana dia	alyse th gram.	ie stabi	lity of s	system	using p	ole-zei	ro and l	oode	4		Conceptual			
5	An	alyse th	e elect	rical ci	rcuit us	ing SI	MULIN	IK.		4		Conceptual			
			Mappi	ng of (	Course	outco	nes wi	th Prog	gram (	Jutco	mes				
rse:															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO PO 10 11		PO 12	PSO1	PSO	
	3	3	2	2	3	1	-	-	-	-	-	-	2	-	
2	3	2	3	3	2	1	-	-	-					-	

PO CO1 CO2 CO3 3 2 1 1 -2 3 3 1 2 3 ------2 **CO4** 3 3 3 1 ------<mark>2</mark> -3 CO5 3 2 3 1 ----1 3 -Target Level 2 <mark>1.6</mark> 1 2.8 2.6 1 2.8 2.6 2.6 -----

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Faculty Sign: 1. 2. 3.

Course Name/code: Digital communication/ KEC-601												
Sessi	on:2022-23											
Sem: VI Even Semester												
S.N.	Course Outcomes											
Stude	Students will be able to Bloom Knowledge											
		Level	Dimension									
1	Apply the concepts of probability theory for random variables and random process for digital communication.	Apply	Conceptual									
2	Evaluation of PSDs and Pulse shaping theory for digital communication.	Analyze	Factual, Conceptual									
3	Apply the concepts of digital modulation theory on various digital transmission schemes.	Apply	Conceptual									
4	Analyze the theory of Matched filter and spread spectrum for digital wireless transmission.	Analyze	Conceptual									
5	Apply the concept of information theory for data transmission.	Apply	Conceptual									

Cours														
	РО	РО	РО	РО	РО	РО	РО	РО	РО	P O	РО	P O	PSO	PSO
PO	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1	-	-	2	-	1	-	-			-	1	1	1
CO2	1	2	2	-	-	1	-	-			1	1	2	2
CO3	2	2	2	2	3	2	-	-			2	3	2	2
CO4	2	2	2	3	2	2	-	-			2	2	2	2
CO5	2	3	2	3	2	3	-	-			2	1	3	3
Targe t Level	1.6	2.2 5	2	2.5	2.3	1.8	-	-			1.7 5	1. 6	2	2

Contam

Cou Sem	rse Name/code: Control Systems/ KEC-602 : VI Even Semester	Session:2022-23										
S.	Course Outcomes											
No Stud	NO   Bloom   Knowledge											
Stuu	ients will be able to	Level	Dimension									
1	Determination of overall transfer function of a control	3	Conceptual,									
	system using block diagram, signal flow graph method &		Procedural									
	mathematical modelling of systems.											
2	Analyze the concept of state variables for the	4	Conceptual,									
	representation of LTI system.		Procedural									
3	Interpret the time domain response analysis for various	3	Conceptual,									
	types of inputs along with the time domain specifications		Procedural									
4	Distinguish the concepts of absolute and relative stability	4	Conceptual,									
	for continuous data systems along with different methods		Procedural									
5	Interpret the concept of frequency domain response	3	Conceptual,									
	analysis and their specifications.		Procedural									

	Mapping of Course outcomes with Program Outcomes													
										PO	PO	РО		
PO	<b>PO1</b>	PO2	PO3	<b>PO4</b>	PO5	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	10	11	12	PSO1	PSO2
CO-1	3	2	2	2	1	-	-	-	-	-	1	1	1	-
CO-2	2	1	2	2	1	-	-	-	-	-	1	1	1	-
CO-3	3	2	2	2	2	1	-	-	-	-	1	2	1	1
CO-4	2	3	3	3	2	2	-	-	-	-	1	2	2	2
CO-5	3	2	2	2	2	1	-	-	-	-	1	2	2	1
Target Level	2.60	2	2.20	2.20	1.60	1.33	-	-	-	-	1	1.60	1.40	1.33

Course Name/code: Antenna & Wave Propagation/KEC-603Session:2022-23										
Sem:	VI Even Semester									
S.No	Course Outcomes									
Stude	nts will be able to	Bloom Level	Knowledge Dimension							
1	Analyze coordinate system and vector calculus	4	Conceptual & Procedural							
2	Analyze static electric field and magnetic field and current	4	Conceptual & Procedural							
3	Analyze antenna fundamentals and radiation mechanism of the antenna	4	Conceptual & Procedural							
4	Analyze and design different types of basic antennas	4	Conceptual & Procedural							
5	Analyze the basic concepts of ground, space, sky wave propagation mechanism	4	Conceptual & Procedural							

Mapping of Course outcomes with Program Outcomes														
Cours														
e:														
										Р	Р	Р		
	PO	0	0	0	PSO	PSO								
PO	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	2	1	1	-	-	-	-	1	1	1		3
CO2	3	3	2	1	1	-	-	-	-	1	1	1		0
CO3	3	3	2	1	1	-	-	-	-	1	1	2		3
<b>CO4</b>	3	3	2	1	1	-	-	-	-	1	1	3		3
CO5	3	3	2	1	1	-	-	-	-	1	1	3		3
Targe														
t														
Level	3	3	2	1	1	-	-	-	-	1	1	2		2.4

Carban

Cours Sem:	se Name/code: Satellite Communication (KEC-062) VI Even Semester	Session:2022-23					
S.No	Course Outcomes						
Stude	nts will be able to	Bloom Level	Knowledge Dimension				
1	Understand the basics of satellite communication	2	Conceptual				
2	Analyze the principles of orbital mechanics and various orbital effects	4	Procedural				
3	Analyze the various subsystems and design satellite link for given specifications	4	Procedural				
4	Understand the new technologies of satellite communication systems	2	Conceptual				
5	Understand the advanced technologies in satellite communication and the Indian Satellite System	2	Conceptual				

Mapping of Course outcomes with Program Outcomes														
Course:														
										PO	PO	PO		
PO	<b>PO1</b>	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	<b>PO8</b>	PO9	10	11	12	PSO1	PSO2
CO1	1	-	-	1	-								1	
CO2	1	1	1	1	-								1	
CO3	1	1	2	2	2								2	
CO4	1	-	-	1	1								1	
CO5	-	-	-	1	1								1	
Target														
Level	1	1	1.5	1.2	1.3								1.4	

Carban

Cours	se Name/sub code: Microcontroller and Embedded S	Systems	KEC 061
Sessio S.No	Course Outcomes		Sem: 6
Stude	nts will able to	Bloom Level	Knowledge Dimension
1	Understand the basic concepts in design of Embedded Systems	2	С
2	Understand the various aspects of Microcontrollers	3	Р
3	Understand the various Communication Protocol	3	С
4	Understand the various Timer operations	2	С
5	Analyse the smaple embedded system on MSP 430.	3	С

Mapping of Course outcomes with Program Outcomes															
Cours															CO
e:															wise
										<b>n</b>	P	n			Targ
										P	P	P			et
	PO	PO	PO	PO	PO	PO	PO	PO	PO	0	0	0	PS	PS	Leve
PO	1	2	3	4	5	6	7	8	9	10	11	12	01	02	1
CO1	2	2	3	3	1	2	-	-	-	1	-	1	3	2	
CO2	1	1	2	3	3	1	-	-	-	-	-	1	2	3	
CO3	3	2	1	2	1	1	-	-	-	-	-	1	2	3	
CO4	1	2	3	3	1	1	-	-	-	-	-	1	2	2	
CO5	2	2	2	3	1	1	-	-	-	-	-	1	2	2	
Targe	1.8	1.8	2.2	2.8	1.4	1.2	-	-	-	1	1	1	2.20	2.40	1.80
t	0	0	0	0	0	0									
Level															

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Cours Sem:	se Name/code: Data Communication Networks/KEC-06 VI Even Semester	3	Session:2022-23
S.No	Course Outcomes		
Stude	nts will be able to	Bloom Level	Knowledge Dimension
1	Understand the basic concepts in design of Data communication networks	2	Conceptual
2	Understand the various aspects of physical layer and data link layer	2	Conceptual
3	Understand the various multiple Access technique and various IEEE standards	2	Factual
4	Understand the various protocols, IP addresses utilized in network layer and connecting devices	2	Conceptual
5	Analyze the protocols utilized in transport layer and application layer	3	Conceptual

	Mapping of Course outcomes with Program Outcomes													
Course:														
										PO	PO	PO		
PO	<b>PO1</b>	PO2	PO3	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	10	11	12	PSO1	PSO2
CO1	2	2	3	3	1	2	-	-	-	1	-	1	<mark>3</mark>	-
CO2	1	2	2	3	3	1	-	-	-	-	-	1	<mark>2</mark>	-
CO3	3	2	2	2	1	1	-	-	-	-	-	1	<mark>2</mark>	-
CO4	2	2	3	3	2	1	-	-	-	-	-	1	<mark>2</mark>	<mark>2</mark>
CO5	2	2	2	3	1	1	-	-	-	-	-	1	<mark>2</mark>	-
Target													<mark>2.2</mark>	2
Level	2	2	2.4	2.8	1.6	1.2				<b>1</b>		1		

Carbon

Cours Sem:	se Name/code : COI/ KNC-601 Odd Semester		Session:2022-23
S.No	Course Outcomes		
Stude	ents will able to	Bloom Level	Knowledge Dimension
1	Identify and explore the Basic features and modalities about the Indian constitution.	Remember, Understand (1,2)	Conceptual
2	Differentiate and relate the functioning of Indian parliamentary system at the center and state level	Remember, Understand (1,2)	Conceptual
3	Differentiate different aspects of the Indian Legal System and its related bodies.	Remember, Understand (1,2)	Conceptual
4	Discover and apply different laws and regulations related to engineering practices.	Remember, Understand (1,2)	Conceptual, Procedural
5	Correlate role of engineers with different organizations and governance models	Remember, Understand (1,2)	Conceptual

Course	Course Programme Outcome (PO)										PSO	PSO		
Code:	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO-1	-	-	-	-	-	1	1	-	-	-	-	-	-	-
CO-2	-	-	-	-	-	1	1	-	-	-	-	-	-	-
CO-3	-	-	-	-	-	2	1	1	-	-	-	-	-	-
CO-4	1	-	-	-	-	2	2	1	-	1	-	-	-	-
CO-5	1	-	-	-	-	1	1	1	1	1	1	1	-	-
Target Level	1	-	-	-	-	1.4	1.2	1	1	1	1	1	-	-

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Course Sem: E	Course Name/code: DBMS (KOE 067)Session:2022-23Sem: Even Semester								
S.No.	Course Outcomes								
Student	s will be able to	Bloom Level	Knowledge Dimension						
1	Acquire the knowledge of database design methodology for implementing real life applications.	BL-3	Conceptual, Procedural						
2	Design an information model expressed in the form of ER diagram.	BL-4	Conceptual, Procedural						
3	Apply real time problems of structured query language to databases.	BL-3	Conceptual, Procedural						
4	Analyze the redundancy problem in database tables using normalization.	BL-4	Conceptual, Procedural						
5	Identify the broad range of database management issues including data integrity, security and recovery in terms of transactions.	BL-4	Conceptual, Procedural						

			Марр	oing of	Course	e outco	mes w	ith Pro	gram	Outco	mes			
Course:														
РО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2
CO-1	3	-	-	-	3	-	-	1	1	-	1	2	-	1
CO-2	2	1	3	2	3	-	-	1	-	3	2	1	3	2
CO-3	3	-	-	-	3	-	-	1	-	1	1	1	3	1
CO-4	2	3	-	3	-	-	-	1	-	-	-	1	2	1
CO-5	2	3	-	3	-	-	-	1	-	-	-	1	1	2
Target	2.40	2.33	3	2.67	3	-	-	1	1	2	1.33	1.20	2.25	1.40
Level														

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Faculty Sign: 1. 2. 3.

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Course Sem: V	Name/code: OOPs (KOE 064) I Even Semester	Session:2022-23				
S.No.	Course Outcomes					
Student	s will be able to	Bloom Level Dimensi				
1	Understand the Basic concept of Object Orientation, object identity and Encapsulation.	BL-2	Conceptual, Procedural			
2	Understand the Basic concept of Basic Structural Modeling.	BL-2	Conceptual, Procedural			
3	Know the knowledge of Object-oriented design, Object design	BL-2	Conceptual, Procedural			
4	Know the knowledge of C++ Basics.	BL-2	Conceptual, Procedural			
5	Understand the Basics of object and class in C++.	BL-2	Conceptual, Procedural			

	Mapping of Course outcomes with Program Outcomes													
Course:														
РО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2
CO-1	3	2	2	3	3	3	2	2	2	3	2	3	3	3
CO-2	3	3	2	3	3	3	2	2	3	3	3	3	3	3
CO-3	3	2	2	2	3	3	2	2	2	3	2	3	3	3
CO-4	3	3	3	3	3	3	2	2	3	3	3	3	3	3
CO-5	3	3	3	3	3	3	2	2	3	3	3	3	3	3
Target Level	3	2.60	2.40	2.80	3	3	2	2	2.60	3	2.60	3	3	3

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Cours	se Name/code: Digital Communication Lab/KEC-6	51	Session:
2022-	2023 Sem: VI Even Semester		
S.	Course Outcomes		
No.			
Stude	ents will be able to	Bloom	Knowledge
		Level	Dimension
1	Apply fundamental theories of digital communication system	BL-3	Conceptual & Procedural
2	Analyze mathematical aspects of communication theory using hardware tools.	BL-4	Conceptual & Procedural
3	Apply the knowledge of linear block codes for secure data transmission.	BL-3	Conceptual & Procedural
4	Analyze different techniques in modern digital communications using MATLAB tools.	BL-3	Conceptual & Procedural
5	Measure the performance of different modulation and demodulation techniques using virtual tools.	BL-5	Conceptual & Procedural

	Mapping of Course outcomes with Program Outcomes													
Cours e:														
										Р	Р	Р		
	PO	PO	PO	PO	PO	PO	PO	PO	PO	0	0	0	PSO	PSO
PO	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	2	3	3	3	-	-	-	-	3	1	2	3	-
CO2	2	2	3	3	3	-	-	-	-	3	1	2	3	-
CO3	2	2	3	3	3	-	-	-	-	3	1	2	3	-
<b>CO4</b>	2	2	3	3	3	-	-	-	-	3	1	2	3	-
CO5	2	2	3	3	3	-	-	-	-	3	1	2	3	-
Targe t														
Level	2	2	3	3	3	-	-	-	-	3	1	2	3	

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Cours Sem:	se Name/code : Control system Lab/KEC-652 VI EVEN Semester		Session:2022-23
S.No	Course Outcomes		
Stude	nts will be able to	Bloom Level	Knowledge Dimension
1	Demonstrate different tools in MATLAB along with the basic matrix operations used in MATLAB.	Apply	Factual, Conceptual, Procedural
2	Evaluate the poles and zeros on s-plane along with transfer function of a given system.	Evaluate	Conceptual, Procedural
3	Evaluate the various specifications of time domain response of a given system.	Evaluate	Conceptual, Procedural
4	Analyze the steady state error of a given transfer function.	Analyze	Conceptual, Procedural
5	Examine the relative stability of a given transfer function using various methods such as root locus, Bode plot and Nyquist plot.	Analyze	Conceptual, Procedural

	Mapping of Course outcomes with Program Outcomes													
Course:														
										PO	PO	PO		
PO	<b>PO1</b>	PO2	PO3	<b>PO4</b>	PO5	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	10	11	12	PSO1	PSO2
CO1	1	2	2	2	3	1	-	-	3	1	2	2	<mark>1</mark>	2
CO2	1	3	1	-	3	1	-	-	2	2	1	2	2	-
CO3	2	3	2	3	3	2	-	-	2	2	1	2	2	-
CO4	2	2	2	3	3	1	-	-	2	2	2	2	<mark>3</mark>	-
CO5	2	3	3	3	3	1	-	-	3	2	2	3	<mark>3</mark>	-
Target													<mark>2.2</mark>	2
Level	1.6	2.6	2	2.75	3	1.2	0	0	2.4	1.8	1.6	2.2		

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Cours Sem:	se Name/code: Cad for Electronics Lab/KEC-653B		Session: 2021-22
S.No	Course Outcomes		
Stude	ents will be able to	Bloom Level	Knowledge Dimension
1	Analyze the performance of different type of inverters using PSPICE.	4	Conceptual & Procedural
2	Analyze the performance of the CMOS based logic gates using PSPICE.	4	Conceptual & Procedural
3	Analyze the performance of CMOS based memory circuits using PSPICE.	4	Conceptual & Procedural
4	Analyze the performance of the different MOS based amplifier configurations using PSPICE.	4	Conceptual & Procedural
5	Analyze the performance of different digital circuits using VHDL	4	Conceptual & Procedural

	Mapping of Course outcomes with Program Outcomes													
Course:														
РО	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2
CO1	2	2	3	3	3	-	-	-	-	3	1	2	3	-
CO2	2	2	3	3	3	-	-	-	-	3	1	2	3	-
CO3	2	2	3	3	3	-	-	-	-	3	1	2	3	-
CO4	2	2	3	3	3	-	-	-	-	3	1	2	3	-
CO5	2	2	3	3	3	-	-	-	-	3	1	2	3	-
Target Level	2	2	3	3	3	-	-	-	-	3	1	2	3	

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Course Name/code: RD / KHU 801

Session: 2021-22

Sem:VIII Even Semester								
S.No	Course Outcomes							
Stude	ents will able to	Bloom Level	Knowledge Dimension					
1	Understand the concepts , basics and importance of rural development.	2	Factual					
2	Recognize and acquire knowledge of pre and post- independence rural development programs.	3	Factual					
3	Understand the importance, structure, significance of Panchayati raj and rural administration.	2	Procedural					
4	Understand about the need and importance of human resource development in rural sector.	2	Factual					
5	Analyze the importance of rural industrialization and Entrepreneurship.	4	Conceptual, Procedural					

		N	/Iappi	ng of	Cour	se out	tcome	es witl	h Prog	gram (	Outcom	es		
Cour														
se:														
	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PS	PS
PO	1	2	3	4	5	6	7	8	9	10	11	12	01	02
CO1	1	1	-	-	-	3	-	2	3	-	-	2	-	-
CO2	-	1	-	-	-	3	-	1	1	-	-	1	-	-
CO3	-	1	-	-	-	3	-	1	2	-	-	2	-	-
<b>CO4</b>	-	2	-	-	-	3	1	2	2	-	-	2	-	-
CO5	1	2	-	-	1	3	2	2	2	-	2	3	-	-
Targ														
et Level	1	1.4	-	-	1	3	1.5	1.6	2	-	2	2	-	-

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Faculty Sign: 1. 2. 3.

Cours	e Name / Code: Entrepreneurship Development / KOI	E-083	Session: 2021-22
Sem: `	VIII Even Semester		
S. No	Course Outcomes		
Stude	nts will be able to	Bloom	Knowledge
		Level	Dimension
1	Understand the theories of entrepreneurship and Entrepreneurial Development Programmes.	2	Factual
2	Understand the importance of Project Management and Project's life cycle.	5	Conceptual, Procedural
3	Analyze the concept of Accountancy and Preparation of balance sheets.	4	Conceptual, Procedural
4	Understand the importance of Project Planning and control	4	Conceptual, Procedural
5	Analyze Social Sector Perspectives and Social Entrepreneurship regarding laws concerning entrepreneur.	4	Conceptual, Procedural

Mapping	Mapping of Course outcomes with Program Outcomes													
Course:														
РО	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2
CO1	-	-	-	-	-	1	1	2	2	-	3	1	-	-
CO2	-	-	-	-	-	2	2	3	3	-	3	2	-	-
CO3	-	-	-	-	-	3	3	2	3	-	3	2	-	-
CO4	-	-	-	-	-	2	3	2	3	-	3	2	-	-
CO5	-	-	-	-	-	2	3	3	2	-	3	3	-	-
Target Level	-	-	-	-	-	2	2.4	2.4	2.6	-	3	2	-	-

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Cours	se Name/code: DSMM / KOE 094 Session:	2022-23	Sem: EVEN
Semes	ster		
S.No	Course Outcomes		
	Students will able to	Bloom Level	Knowledge Dimension
1	Gain knowledge about basic concepts of Digital Marketing	2	Factual
2	Identify Social Media Marketing techniques suitable for a business.	3	Factual
3	Identify Multimedia Marketing and its uses in Digital Marketing.	2	Procedural
4	Apply Digital Marketing in an organization to make it a Digital Success	2	Factual
5	Design innovative ideas and trends to make business and marketing attractive.	4	Conceptual, Procedural

Mapping of Course outcomes with Program Outcomes															
Cours e:															CO wise
DO	PO	PO	PO	PO	PO	PO	PO	PO	PO	P 0	P 0	P 0	PSO	PSO	Targ et
ru	1	4	3	4	3	0	/	0	9	10	11	14	1	4	Level
CO1	1	1	-	-	-	3	-	2	3	-	-	2	-	-	
CO2	-	2	-	-	-	3	-	1	1	-	-	1	-	-	
CO3	-	1	-	-	-	3	-	1	2	-	-	1	-	-	
CO4	-	2	-	-	-	2	1	2	2	-	-	2	-	-	
CO5	1	2	-	-	2	2	2	2	2	-	2	3	-	_	
Target Level	1	1.6	-	-	2	2.6	1.5	1.6	2	-	2	1. 8	-	-	

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S.	Course Outcomes		
Stud	ents will be able to	Bloom Level	Knowledge Dimension
1	Identify the problem for the project through available literature survey.	2	Conceptual Procedural
2	Analyze the problem and find the appropriate solution for the selected project	4	Conceptual Procedural
3	Apply the knowledge of Electronics, Programming and Communication Engineering for the design of project	3	Conceptual Procedural
4	Develop solutions for the problem by using the techniques, skills, and modern engineering tools.	6	Conceptual Procedural
5	Function on multi-disciplinary teams through effective communication skill and team behavior.	4	Conceptual Procedural
6.	Understand the basics of engineering, finance, and management principles.	2	Conceptual Procedural
7.	Accomplish the project to meet desired needs within realistic constraints of ethics, environment, economy, and society	6	Conceptual Procedural

Course:														
PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2
CO1	1	3	2	-	1	2	2	1	3	2	3	1	1	1
CO2	2	3	3	2	-	-	-	3	-	-	1	-	1	-
CO3	2	2	3	1	2	2	2	-	3	-	-	3	2	1
<b>CO4</b>	-	3	2	3	2	1	1	-	2	2	2	2	-	1
CO5	3	3	3	2	3	2	2	2	1	-	1	1	2	3
Target Level	2	2.80	2.60	2	2	1.75	1.75	2	2.25	2	1.75	1.75	1.50	1.50

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#### **Department of Electrical & Electronics Engineering**

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North



### **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 3<sup>rd</sup>

Subject Name (Code): Technical Communications (KAS-301)

S No.	Course Outcomes	BL	KC
Studen	it will be able to:		
1	Understand the significance of value inputs in a classroom, process of value education, meaning of happiness and prosperity and do a correct appraisal of the current scenario in the society.	2	С
2	Apply the meaning of Harmony in the Self the Co-existence of Self and Body.	2	Р
3	Apply the value of harmonious relationship based on trust, respect and other naturally acceptable feelings in human-human relationships.	2	Р
4	Analyze the harmony in nature and existence, and work out their mutually fulfilling participation in the nature.	2	Р
5	Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work.	2	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	-	-	-	-	-	1	1	1	2	3	2	2	-	-
CO-2	-	-	-	-	-	-	-	1	1	3	2	2	-	-
CO-3	-	-	-	-	-	-	-	1	2	3	2	2	-	-
CO-4	-	-	-	-	-	1	1	-	1	3	2	3	-	-
CO-5	-	-	-	-	-	-	-	-	2	3	2	1	-	-
Target Level	-	-	-	-	-	1	1	1	1.6	3	2	2	-	-

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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F: Factual C: Conceptual P: Procedural M:Metacognitive



## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 3<sup>rd</sup>

#### Subject Name (Code): Mathematics-IV (KAS-302)

S No.	Course Outcomes	BL	КС
Studen	it will be able to:		
1	Identify the application of partial differential equations and apply for solving Linear and non-linear partial differential equations	4	Р
2	Understand the classification of second order partial differential equations	3	Р
3	Method of separation of variables to evaluate the general solution of Heat, Wave, Laplace equations and Transmission lines.	4	Р
4	Remember the concept of moments, skewness, kurtosis and moment generating function and analyze the linear and non-linear regression.	4	Р
5	Remember the concept of probability, random variable and apply for solving the problem related to discrete and continuous probability distribution	3	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	3	2	2	2	-	-	-	-	-	-	2	-	-
CO-2	2	1	1	1	-	-	I	-	-	-	-	1	-	-
CO-3	3	3	2	2	3	-	I	-	-	-	-	3	-	-
<b>CO-4</b>	1	1	1	-	-	-	I	-	-	-	-	1	-	-
CO-5	1	1	1	-	-	-	-	-	-	-	-	1	-	-
Target Level	2	1.8	1.4	1.66	2.5							1.6		

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BL-1: Remember BL-2: Understand BL-3: Apply

BL-4: Analyze BL-5: Evaluate

**BL-6: Create** 

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### **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 3<sup>rd</sup>

#### Subject Name (Code): Electromagnetic Field Theory (KEE-301)

S No.	Course Outcomes	BL	KC
Studen	it will be able to:		
1	Apply different coordinate systems and their application in electromagnetic field theory.	3	С
2	Analyze the concept of static electric field, current, properties of conductors and boundary conditions.	4	Р
3	Analyze the concept of static magnetic field, magnetic scalar and vector potential.	4	Р
4	Analyze the forces due to magnetic field, magnetization, magnetic boundary conditions and inductors.	4	Р
5	Analyze displacement current, time varying fields, propagation and reflection of EM waves and transmission lines.	6	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	2	1	2	-	-	-	-	1	-	-	1	-	-
CO-2	3	3	2	3	-	-	-	-	1	-	-	2	-	-
CO-3	3	3	2	3	-	-	-	-	1	-	-	2	-	-
CO-4	3	3	2	2	-	-	-	-	1	-	-	2	-	-
CO-5	3	3	2	3	2	-	-	-	1	-	-	3	2	-
Target Level	3	2.8	1.8	2.6	2	-	-	-	1	-	-	2	2	



BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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<b>BL-1: Remember</b>
<b>BL-2: Understand</b>
BL-3: Apply
BL-4: Analyze
BL-5: Evaluate
<b>BL-6: Create</b>

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Session: 2022-23

Semester: 3<sup>rd</sup>

Subject Name (Code): Electrical Measurements & Instrumentation (KEE-302)

S No.	Course Outcomes	BL	КС
Studen	it will be able to:		
1	Analyze different types of instruments for the measurement of voltage, current, power and energy.	4	Р
2	Understand measurement of electrical quantities resistance, inductance and capacitance with the help of bridges	2	С
3	Analyze the working of instrument transformers and find the errors in current and potential transformers	4	Р
4	Understand the working of electronic instruments like voltmeter, multi- meter, frequency meter and CRO.	2	С
5	Apply the knowledge of transducers, their classifications and their applications for the measurement of physical quantities like motion, force, pressure, temperature, flow and liquid level.	3	С

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	3	3	2	-	-	-	-	-	-	-	2	3	-
СО-2	2	2	1	1	-	-	-	-	-	-	-	2	2	-
CO-3	2	3	3	3	-	-	-	-	-	-	-	2	2	-
CO-4	2	2	1	1	-	-	-	-	-	-	-	2	1	-
CO-5	3	3	3	3	-	-	-	-	-	-	-	2	2	-
Target Level	2.4	2.6	2.2	2								2	2	

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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### **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 3<sup>rd</sup>

Subject Name (Code): Basic Signals & Systems (KEE-303)

S No.	Course Outcomes	BL	KC
Studen	it will be able to:		
1	Draw the various types of signals & systems and perform mathematical operations on them.	1	С
2	Analyze Fourier series and Fourier transform and its applications to network analysis.	4	Р
3	Analyze the properties of continuous time signals and system through Laplace transform to get the response of linear system to known inputs.	4	Р
4	Construct the state-space models of SISO & MIMO system using the concept of state-space.	3	Р
5	Solve complex engineering problems using difference equations using the concepts of Z transform.	3	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	2	2	1	1	-	-	-	-	-	-	-	3	1	-
CO-2	3	3	2	2	-	-	I	-	-	-	-	3	2	-
CO-3	3	3	2	2	-	-	I	-	-	-	-	3	2	-
<b>CO-4</b>	3	2	1	1	1	-	I	-	-	-	-	3	2	-
CO-5	3	2	1	1	-	-	I	-	-	-	-	3	1	-
Target Level	2.8	2.4	1.4	1.4	1	-	-	-	-	-	-	3	1.6	-

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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### **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 3<sup>rd</sup>

Subject Name (Code): Analog Electronics Lab (KEE-351)

S No.	Course Outcomes	BL	КС
Studen	it will be able to:		
1	Understand the characteristics and applications of the Semiconductor devices.	2	С
2	Draw the characteristics of BJT, FET and MOSFET.	3	Р
3	Understand the parameters of Operational Amplifier and instrumentation Amplifier with their applications.	2	С
4	Understand the V-I characteristics of Power devices like SCR, TRIAC	2	С
5	Analyze various parameters of semiconductor devices.	4	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	1	-	1	1	-	-	-	-	-	-	-	2	-	-
CO-2	3	-	2	-	-	-	-	-	-	-	-	1	I	-
CO-3	3	-	1	2	-	-	-	-	-	-	-	2	-	-
CO-4	1	-	1	2	-	-	-	-	-	-	-	1	-	-
CO-5	3	1	2	2	-	-	-	-	-	-	-	3	I	-
Target Level	2.2	1	1.4	1.75								1.8		

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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**Department of Electrical & Electronics Engineering** 

Session: 2022-23

Semester: 3rd

#### Subject Name (Code): Electrical Measurements and Instrumentation Lab (KEE-352)

S No.	Course Outcomes	BL	KC
Studen			
1	Understand the importance of calibration of measuring instruments.	2	С
2	Demonstrate the construction and working of different measuring instruments.	3	Р
3	Apply the knowledge of AC and DC bridges in different measuring applications	3	Р
4	Determine electrical engineering parameters like voltage, current, power & phase difference in industry as well as in power generation, transmission and distribution sectors.	5	С
5	Analyze and solve the variety of problems in the field of electrical measurements.	4	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	2	1	1	1	-	-	-	-	-	-	-	1	-	-
CO-2	2	1	1	1	-	-	-	-	-	-	-	-	-	-
CO-3	3	3	2	2	-	-	-	I	-	-	-	2	1	-
CO-4	2	2	2	1	-	-	-	-	-	-	-	3	1	-
CO-5	2	2	2	1	-	-	-	-	-	-	-	3	-	-



BL-1: Kentenber BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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THE REPORT		Department of Electrical & Electronics Engineering													
Target Level	2.2	1.8	1.6	1.2								2.25	1		

BL-1: Remember
<b>BL-2: Understand</b>
BL-3: Apply
BL-4: Analyze
<b>BL-5: Evaluate</b>
<b>BL-6: Create</b>

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### **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 3<sup>rd</sup>

Subject Name (Code): Electrical Workshop (KEE-353)

S No.	Course Outcomes	BL	КС
Studen			
1	Understand various types of electrical connections.	2	F
2	Analyze the difference between various electrical wires, cables and accessories.	4	С
3	Understand the layout of electrical substation & various safety measures.	2	С
4	Understand the construction, working and application of various workshop tools.	2	С
5	Develop small circuits on printed circuit boards.	3	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	3	2	2	-	-	-	-	-	2	1	2	1	1
CO-2	3	3	3	2	-	-	-	-	-	2	2	2	2	2
СО-3	3	2	3	2	-	-	-	-	-	2	2	2	2	2
CO-4	3	2	2	2	-	-	-	-	-	2	2	2	2	2
CO-5	3	2	2	2	-	-	-	-	-	2	2	3	2	3
Target Level	3	2.4	2.4	2	-	-	-	-	-	2	1.8	2.2	1.8	2

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 3<sup>rd</sup>

Subject Name (Code): Mini Project or Internship Assessment (KEE-354)

S No.	Course Outcomes	BL	KC
Studen			
1	Understand research papers for exploring new fields and review reporting.	2	С
2	Evaluate new directions of various cutting edge technologies.	5	Р
3	Create various skills by preparing detailed project report including all the findings.	6	Р
4	Effective communication by making an oral presentation to show the findings.	3	Р
5	Create facts related knowledge by preparing detailed report including outcomes.	6	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	2	-	2	-	1	-	-	-	-	2	2	-	-
CO-2	3	3	-	2	2	1	2	-	2	-	2	2	-	-
CO-3	3	2	-	3	2	1	2	-	2	-	2	2	-	-
CO-4	-	1	-	1	-	-	-	-	-	3	-	1	-	-
CO-5	-	2	-	1	1	1	2	-	2	-	2	2	-	-
Target Level	3	2		1.8	1.66	1	2		2	3	2	1.8		

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BL-1: Remember

**BL-2: Understand** 

**BL-3:** Apply

**BL-4:** Analyze

**BL-5: Evaluate** 

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 5<sup>th</sup>

#### Subject Name (Code): Power System-I (KEE-501)

S No.	Course Outcomes	BL	KC
Studen			
1	Describe the working principle and basic components of conventional and nonconventional power plants as well as the other aspects of power generation.	2	F, C
2	Analyze the role and functioning of different types of supply systems, conductors and performance of transmission lines.	4	С, Р
3	Calculate the sag and tension in overhead lines with wind & ice loading, potential distribution over a string of insulators, string efficiency and its improvement.	3	С, Р
4	Calculate the inductance and capacitance of single phase, three phase lines with symmetrical and unsymmetrical spacing including effect of earth on capacitance of transmission lines.	3	C, P
5	Calculate the resistance and capacitance parameters of different types of cables including grading of cables.	3	С, Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	2	2	1	1	-	-	1	-	-	-	-	1	2	1
CO-2	3	3	2	1	-	-	-	-	-	-	-	1	2	1
CO-3	3	3	1	1	-	-	-	-	-	-	-	1	2	1
CO-4	3	3	1	2	-	-	-	-	-	-	-	1	2	1
CO-5	3	3	1	1	-	-	-	-	-	-	-	1	2	1
Target Level	2.8	2.8	1.2	1.2			1					1	2	1

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 5<sup>th</sup>

#### Subject Name (Code): Control System (KEE-502)

S No.	Course Outcomes	BL	KC
Studen			
1	Calculate the transfer function for the operation of open loop and closed loop control systems.	3	Р
2	Analyze the performance of basic control systems in the time domain.	4	Р
3	Analyze the stability of linear time-invariant systems in time domain using Routh Hurwitz criterion and root locus technique.	3	Р
4	Analyze the stability of linear time-invariant systems in frequency domain using Nyquist criterion and Bode plot.	3	Р
5	Understand the different types of compensators to achieve the desired performance of control System by root locus and Bode plot method.	2	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	-	-	-	-	-	-	-	-	1	-	3	-	2
CO-2	3	2	-	2	2	-	-	-	-	1	-	3	-	1
CO-3	3	2	-	2	3	-	-	-	-	1	-	3	-	1
CO-4	3	2	-	2	3	-	-	-	-	1	-	3	-	1
CO-5	3	1	-	1	2	-	-	-	-	1	-	2	-	1
Target Level	3	1.75		1.75	2.5					1		2.8		1.2

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 5<sup>th</sup>

Subject Name (Code): Electrical Machines-II (KEE-503)

S No.	Course Outcomes	BL	KC
Studen			
1	Analyze the performance of the synchronous machines using voltage regulation methods, voltage and frequency control, load sharing and parallel operation	4	Р
2	Analyze the performance of salient pole synchronous machine using two reaction theory and effect of varying field current at different loads	4	Р
3	Analyze the performance of induction machine using phasor diagram and torque slip characteristics	4	Р
4	Analyze the performance of induction machine using different speed control methods	4	Р
5	Analyze the performance of single-phase induction machine using no-load and block rotor test and different starting methods	4	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	2	2	1	-	-	-	-	-	1	1	3	-	-
CO-2	3	1	3	-	-	-	-	-	-	-	2	1	-	-
CO-3	3	2	3	-	-	-	-	-	-	-	1	2	-	-
CO-4	3	2	3	1	-	-	-	-	-	1	1	3	1	-
CO-5	2	2	2	-	-	-	-	-	-	-	1	3	-	-
Target Level	2.8	1.8	2.6	1	-	-	-	-	-	1	1.2	2.4	1	-

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 5<sup>th</sup>

Subject Name (Code): Sensors & Transducers (KEE-052)

S No.	Course Outcomes	BL	KC
Studen			
1	Understand sensors used in industry for measurement of displacement, force and pressure.	2	С
2	Understand sensors in industry for measurement of temperature, position, accelerometer, vibration sensor, flow and level.	2	С
3	Analysis of image processing and machine vision system in a pick and place robot.	3	Р
4	Analyze data acquisition systems.	4	Р
5	Apply the concept of smart sensors in recent technologies like e Vehicle, and Industrial robots.	3	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	2	1	2	1	1	-	1	-	1	-	-	2	-	-
CO-2	2	1	2	1	1	-	1	-	-	-	-	1	-	-
СО-3	3	2	2	2	1	-	1	-	1	-	-	2	-	-
CO-4	3	2	2	2	2	-		-	1	-	-	1	-	-
CO-5	3	2	2	1	1	-	1	-	1	-	-	1	-	2
Target Level	2.6	1.6	2	1.4	1.2		1		1			1.4		2

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**BL-1: Remember** 

**BL-2: Understand** 

**BL-3: Apply** 

**BL-4: Analyze** 

**BL-5: Evaluate** 

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 5<sup>th</sup>

#### Subject Name (Code): Industrial Automation & Control (KEE-053)

S No.	Course Outcomes	BL	КС
Studen	it will be able to:		
1	Understand the concept and applications of automation and basic Industrial communication protocols	2	С
2	Apply the concept of relay logic in automation-based applications	3	Р
3	Understand about PLC, its operations and applications in automation.	3	Р
4	Analyze the industrial sensors and its terminology and their interfacing with programming logic controllers.	3	Р
5	Demonstrate pneumatic systems and its applications in industry	3	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	2	1	1	-	1	-	1	-	1	-	-	2	-	-
CO-2	2	2	2	1	1	-	1	-	1	-	-	2	-	-
CO-3	2	1	1	-	1	-	1	-	1	-	-	2	-	-
CO-4	3	3	2	2	2	-	2	-	1	-	-	3	-	-
CO-5	2	1	1	-	1	-	1	-	1	-	-	2	-	-
Target Level	2.2	1.6	1.4	1.5	1.2	-	1.2	-	1.00	-	-	2.2	-	-

**BL-1: Remember** 

**BL-2: Understand** 

**BL-3: Apply** 

**BL-4: Analyze** 

**BL-5: Evaluate** 

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 5<sup>th</sup>

Subject Name (Code): Neural Network & Fuzzy System (KEE-056)

S No.	Course Outcomes	BL	KC											
Studen	Student will be able to:													
1	Understand and analyze the concepts of learning in neural network.	4	С											
2	Apply neural network for designing linear and non-linear type problems.	3	С											
3	Understand and analyze the concepts of fuzzy logic.	4	М											
4	Apply fuzzy logic for designing control systems.	3	М											
5	Understand the concepts of neuro-fuzzy networks and apply neuro-fuzzy systems for solving conventional problems.	3	С											

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	2	1	2	1	1	-	1	-	1	-	-	2	2	1
CO-2	2	1	2	2	1	-	1	-	-	-	-	1	2	2
CO-3	2	1	1	1	1	-	1	-	1	-	-	2	1	1
CO-4	1	2	1	1	2	-	-	-	1	-	-	1	2	2
CO-5	2	1	1	1	1	-	1	-	1	-	-	1	2	2
Target Level	1.80	1.20	1.40	1.20	1.20	-	1.00	-	1.00	-	-	1.40	1.80	1.60

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 5<sup>th</sup>

#### Subject Name (Code): Analog & Digital Communication (KEE-058)

S No.	Course Outcomes	BL	KC											
Studen	Student will be able to:													
1	Apply the concept of Amplitude Modulation in communication system.	3	Р											
2	Apply the concept of Frequency & Phase modulation in communication system.	3	Р											
3	Explore the concept of Pulse Modulation Techniques.	3	Р											
4	Analyze the concept of Digital Modulation Techniques and their use in communication system.	4	Р											
5	Analyze the concept of Information Theory in Communication Engineering.	4	Р											

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	1	1	-	-	-	-	-	-	-	1	2	-	-
CO-2	3	1	1	-	-	-	-	-	-	-	2	2	-	-
CO-3	3	2	2	2	-	-	-	-	-	-	1	3	-	`1
CO-4	3	2	1	1	-	-	-	-	-	-	-	3	-	1
CO-5	3	2	-	1	-	-	-	-	-	-	-	3	-	1
Target Level	3	1.6	1.25	1.3	-	-	-	-	-	-	1.33	2.6	-	1

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**BL-1: Remember BL-2: Understand** 

**BL-3: Apply** 

**BL-4: Analyze** 

**BL-5: Evaluate** 

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 5<sup>th</sup>

Subject Name (Code): Power System Lab-I (KEE-551)

S No.	Course Outcomes	BL	KC
Studen			
1	Simulation of power system model for various parameters of transmission line	3	Р
2	Simulation of power system model for ABCD constant of transmission line	3	Р
3	Simulation of power system model for the Ferranti effect in transmission line	3	Р
4	Simulation of power system model for the sag & tension and string efficiency of insulator of transmission line	3	Р
5	Simulation of power system model for the skin effect, and ground clearance of transmission line.	3	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	2	-	1	3	-	-	-	1	1	-	1	1	-
CO-2	3	2	-	1	3	-	-	-	1	1	-	1	1	-
CO-3	3	2	-	1	3	-	-	-	1	1	-	1	1	-
CO-4	3	2	-	1	3	-	-	-	1	1	-	1	1	-
CO-5	3	2	-	1	3	-	-	-	1	1	-	1	1	-
Target Level	3	2	-	1	3	-	-	-	1	1	-	1	1	-

BL Remembe

BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 5<sup>th</sup>

Subject Name (Code): Control System Lab (KEE-552)

S No.	Course Outcomes	BL	КС
Studen	it will be able to:		
1	Analyze the characteristics of control system components like ac servo motor, synchro, potentiometer, servo voltage stabilizer.	4	Р
2	Analyze the performance of control systems with different controllers / compensators.	4	Р
3	Analyze the behavior of dc motor in open loop and closed loop.	4	Р
4	Analyze the system's stability with different methods of time & frequency domain using MATLAB software.	4	Р
5	Apply the conversion of transfer functions into state space & vice versa and check the performance parameters in time domain response of a second order system for step input via MATLAB software.	3	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	2	-	1	2	-	-	-	-	2	-	2	2	-
CO-2	3	2	-	1	2	-	-	-	-	2	-	2	2	-
CO-3	3	2	-	1	2	-	-	-	-	2	-	2	-	-
CO-4	2	1	-	2	3	-	-	-	-	1	-	3	-	-
CO-5	2	1	-	2	3	-	-	-	-	1	-	3	-	-
Target Level	2.6	1.6		1.4	1.4	-	-	-	-	1.6		1.4	2	-

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 5<sup>th</sup>

Subject Name (Code): Electrical Machines-II Lab (KEE-553)

S No.	Course	BL	KC
Studen			
1	Calculate the parameters of the synchronous machines.	4	Р
2	Understand parallel operation of two alternators.	4	Р
3	Determine the parameters of the three phase induction motors.	4	Р
4	Evaluate the performance of single-phase induction motor under different operating conditions	4	Р
5	Evaluate the performance of synchronous motor	4	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	-	2	2	-	-	-	-	-	1	-	2	-	-
СО-2	2	-	2	-	-	-	-	-	-	-	-	3	-	-
СО-3	3	-	2	2	-	-	-	-	-	1	-	2	1	-
CO-4	3	-	2	2	-	-	-	-	-	1	-	2	1	-
CO-5	3	-	1	1	-	-	-	-	-	1	-	3	-	-
Target Level	2.8	-	1.8	1.4	-	-	-	-	-	1	-	2.6	1	-

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 5<sup>th</sup>

Subject Name (Code): Mini Project or Internship Assessment (KEN-554)

S No.	Course Outcomes	BL	KC										
Studen	Student will be able to:												
1	Understand research papers for exploring new fields and review reporting.	2	С										
2	Evaluate new directions of various cutting-edge technologies.	5	Р										
3	Create various skills by preparing detailed project report including all the findings.	6	С, Р										
4	Effective communication by making an oral presentation to show the findings.	3	Р										
5	Create facts related knowledge by preparing detailed report including outcomes.	6	С, Р										

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	3	3	3	2	1	-	-	-	3	2	2	3	3
CO-2	3	3	3	3	3	1	-	-	-	3	2	2	3	3
СО-3	3	3	3	3	2	1	-	-	-	3	2	2	3	3
CO-4	3	3	3	3	2	1	-	-	-	3	2	2	3	3
CO-5	3	3	3	3	3	1	-	-	-	3	2	2	3	3
Target Level	3.0	3.0	3.0	3.0	2.4	1	-	-	-	3.0	2.0	2.0	3.0	3.0

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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#### **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 7<sup>th</sup>

Subject Name (Code): Rural Development: Administration and Planning (KHU-701)

S No.	Course Outcomes	BL	KC									
Student will be able to:												
1	Understand the concepts, basics and importance of rural development	2	С									
2	Explain pre and post-independence rural development programs.	2	Р									
3	Understand the importance, structure, significance of Panchayati raj and rural administration.	2	С									
4	Acquire the knowledge about the need and importance of human resource development in rural sector.	2	С									
5	Examine the importance of rural industrialization and entrepreneurship	3	Р									

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	-	-	-	-	-	2	2	2	-	-	-	2	-	-
CO-2	-	-	-	-	-	1	1	1	-	-	-	1	-	-
CO-3	-	-	-	-	-	1	1	1	-	-	-	1	-	-
CO-4	-	-	-	-	-	2	3	2	2	-	-	2	-	-
CO-5	-	-	-	-	-	2	3	2	2	-	1	2	-	-
Target Level	-	-	-	-	-	1.6	2	1.6	2	-	1	1.6	-	-

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

#### Session: 2022-23

Semester: 7<sup>th</sup>

#### Subject Name (Code): Energy Conservation and Auditing (KEE-071)

S No.	Course Outcomes	BL	КС									
Student will be able to:												
1	Analyze the energy conservation/saving opportunities in different electric system and understand related legislations.	4	F, P									
2	Evaluate the energy saving behavior of utilities through implementation of demand side management (DSM).	5	Р									
3	Analyze energy audit & management and preparation of energy audit report for different energy conservation instances.	4	Р									
4	Apply the energy audit for Mechanical Utilities.	3	Р									
5	Evaluate cost-effective measures towards improving energy efficiency and energy conservation by implementation of energy efficient technologies	5	Р									

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	3	2	1	-	1	2	-	-	-	-	2	-	1
CO-2	3	3	-	2	-	1	2	1	-	-	-	2	-	1
CO-3	3	3	2	2	-	1	2	-	2	1	1	3	-	1
CO-4	3	3	2	2	-	-	1	-	2	1	-	2	-	1
CO-5	3	3	1	2	-	1	2	-	-	-	-	2	-	1
Target Level	3	3	1.75	1.8	-	1	1.8	1	2	1	1	2.2	-	1

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BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 7<sup>th</sup>

Subject Name (Code): Power Quality & FACTS (KEE-074)

S No.	Course Outcomes	BL	KC									
Student will be able to:												
1	Understand the power quality issues in electrical distribution network	2	С									
2	Analyze the sources of voltage sag and protective devices including voltage regulators, active series compensator and UPS.	5	Р									
3	Analyze the different phenomenon causing electrical transients and devices for over voltage protection.	5	Р									
4	Analyze the working and application of different type of FACT devices like SSC, SVC, TSC, SSS, TCSC, and UPFC.	5	Р									
5	Analyze the causes of harmonics, its effect on motor, capacitor, cables and mitigation techniques.	5	Р									

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	2	1	1	1	-	-	-	-	-	-	-	1	1	-
CO-2	3	2	1	2	-	-	-	-	-	1	-	1	-	-
CO-3	3	2	2	1	1	-	-	-	-	1	-	3	2	-
CO-4	3	3	2	2	1	-	-	-	-	2	-	3	2	-
CO-5	3	1	2	2	-	-	-	-	-	-	-	2	1	-
Target Level	2.8	1.8	1.6	1.6	1	-	-	-	-	1.33		2	1.5	-

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BL-1: Kentember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 7<sup>th</sup>

#### Subject Name (Code): Electric & Hybrid Vehicles (KEN-071)

S No.	Course Outcomes	BL	KC
Studen			
1	Explain the basics of electric and hybrid electric vehicles, their architecture, technologies and fundamentals.	2	Р
2	Explain plug – in hybrid electric vehicle architecture, design and component sizing and the power electronics devices used in hybrid electric vehicles.	2	Р
3	Analyze various electric drives suitable for hybrid electric vehicles	4	Р
4	Discuss different energy storage technologies used for hybrid electric vehicles and their control	2	С
5	Demonstrate different configurations of electric vehicles and its components, hybrid vehicle configuration by different techniques, sizing of components and design optimization and energy management	2	С

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	3	2	2	3	2	1	1	1	1	2	3	2	3
CO-2	3	3	2	2	3	3	1	1	1	1	2	2	3	3
CO-3	3	3	2	2	2	3	1	1	1	1	2	2	3	3
<b>CO-4</b>	3	3	3	2	3	3	1	1	1	1	2	3	3	3
CO-5	3	3	3	3	3	3	1	1	1	2	1	2	3	3
Target Level	3	3	2.4	2.2	2.8	2.8	1	1	1	1.2	1.8	2.4	2.8	3

BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 7<sup>th</sup>

#### Subject Name (Code): Power System Protection (KEE-077)

S No.	Course Outcomes	BL	КС									
Student will be able to:												
1	Understand the need for the power system protection devices.	2	С									
2	Explain Relay types ,basic terminology and its application.	2	С									
3	Describe types of faults and protection scheme for major power system components	3	С									
4	Describe the circuit breaker operation, testing and types.	2	С									
5	Explain the electronic relay, microprocessor and computer-based protection schemes	3	С									

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	1	1	-	1	-	1	-	-	-	-	-	2	-	-
CO-2	1	1	-	1	-	2		-	-	-	-	2	-	-
CO-3	2	1	-	2	-	2		-	-	-	-	2	-	-
<b>CO-4</b>	2	1	-	2	-	2		-	-	-	-	2	-	-
CO-5	2	1	-	1	-	2		-	-	-	-	2	-	-



BL-2: Understand

BL-3: Apply

BL-4: Analyze

BL-5: Evaluate

**BL-6: Create** 

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Session: 2022-23

Semester: 7<sup>th</sup>

#### Subject Name (Code): Utilization of Electrical Energy & Electric Traction (KEE-079)

S No.	Course Outcomes	BL	KC											
Studen	Student will be able to:													
1	Understand different types of electric heating.	2	С											
2	Apply concept of electric welding and electrolyte process.	3	Р											
3	Design of interior and exterior lighting systems, illumination levels for various purposes light fittings, factory lighting, flood lighting, street lighting.	3	Р											
4	Apply the fundamental concepts of electric traction.	3	Р											
5	Apply the knowledge of power electronics converters in Electric Traction.	3	С											

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	1	1	-	-	-	-	-	-	-	-	-	2	-	-
CO-2	3	1	-	1	I	-	I	-	-	-	-	2	-	-
CO-3	3	3	3	3	2	2	-	-	1	-	1	3	-	-
CO-4	3	2	1	2	1	1	1	-	-	-	-	2	-	-

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BL-1: Remember

**BL-2: Understand** 

**BL-3: Apply** 

**BL-4: Analyze** 

**BL-5: Evaluate** 

**BL-6: Create** 

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**Department of Electrical & Electronics Engineering** 

CO-5	3	3	1	2	1	1	1	-	-	-	-	2	-	-
Target Level	2.6	2	1.66	2	1.33	1.33	1	-	1	-	1	2.2	-	-

Session: 2022-23

Semester: 7<sup>th</sup>

Subject Name (Code): Renewable Energy Resources (KOE-074)

S No.	Course	BL	KC
Studen	it will be able to:		
1	Understand various non-conventional energy resources and their availability along with knowledge on Solar Cells	2	С
2	Understand solar radiation, flat plate collectors and focusing type collector along with solar thermal power plants knowledge.	2	М
3	Analyze Geothermal Energy, Magneto-hydrodynamics and Fuel Cells	4	С
4	Analyze thermo-electrical and thermionic Conversions and wind energy	4	М
5	Understand Bio-mass, Ocean Thermal Energy Conversion and Wave and Tidal Wave	2	С

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	3	1	1	3	2	3	-	-	1	-	2	-	-
CO-2	2	3	3	2	3	3	3	-	-	1	-	3	-	2
CO-3	3	3	3	2	3	2	3	-	-	1	-	2	-	1

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BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **KIET Group of Institutions, Ghaziabad**

## **Department of Electrical & Electronics Engineering**

CO-4	2	3	3	2	3	3	3	-	-	1	-	3	-	1
CO-5	3	3	3	1	2	3	3	-	-	1	-	3	-	2
Target Level	2.6	3	2.6	1.6	2.8	2.6	3	-	-	1	-	2.6	-	1.5

Session: 2022-23

Semester: 7<sup>th</sup>

Subject Name (Code): Vision for Humane Society (KOE-076)

S No.	Course Outcomes	BL	KL
Studen	it will be able to:		
1	Analyze the human aspirations, its fulfillment and need of universal human order.	4	С
2	Analyze the types of Human-Human relationship & its fulfillment.	4	Р
3	Analyze justice from family to world family order.	4	С
4	Analyze the conceptual framework of undivided society as well as universal human order.	4	С
5	Analyze the transition from current state to the undivided society and universal human order.	4	С

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	-	-	-	-	-	2	2	2	1	1	2	3	-	-
CO-2	-	-	-	-	-	3	3	3	2	2	2	3	-	-
CO-3	-	-	-	-	-	2	1	2	1	1	1	3	-	-

BL-1: Remember		F: Factual
<b>BL-2: Understand</b>		C: Conceptual
BL-3: Apply	D 37 630	P: Procedural
BL-4: Analyze	Page 37 of 39	<b>M:Metacognitive</b>
BL-5: Evaluate		

**BL-6: Create** 

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## **KIET Group of Institutions, Ghaziabad**

## **Department of Electrical & Electronics Engineering**

CO-4	-	-	-	_	-	2	2	2	1	1	1	3	-	-
CO-5	-	-	-	-	-	1	1	1	-	1	1	3	-	-
Target Level	-	-	-	-	-	2	1.8	2	1	1.2	1.4	3	-	-

Session: 2022-23

Semester: 7<sup>th</sup>

#### Subject Name (Code): Industrial Automation & PLC Lab (KEN-751)

S No.	Course Outcomes	BL	KC
Studen	t will be able to:		
1	Understand automation, PLC, I/O modules of PLC, Programming languages and instructions of PLC	2	С
2	Analyze Ladder diagram concept to test digital logic gates, Boolean expression, Demorgan's theorem."	3	Р
3	Understand the Ladder program for DOL starter, timers, and counters	2	С
4	Understand evolution and architecture of DCS, hierarchical control in DCS, programming DCS	2	С
5	Explain the concept of basic digital electronics and data manipulation, basic PLC circuits for entry-level PLC applications.	2	С

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	2	1	1	-	1	-	1	-	1	-	-	2	-	1
CO-2	3	2	2	1	1	-	1	-	1	-	-	2	-	2

BL-1: Remember		F: Factual
<b>BL-2: Understand</b>		C: Conceptual
BL-3: Apply	D 29 620	P: Procedural
BL-4: Analyze	Page 38 of 39	<b>M:Metacognitive</b>
BL-5: Evaluate		
BL-6: Create		



**Department of Electrical & Electronics Engineering** 

CO-3	2	1	1	-	1	-	1	-	1	-	-	2	-	-
CO-4	2	1	2	2	2	-	2	-	1	-	-	3	-	-
CO-5	2	1	1	-	1	-	1	-	1	-	-	2	-	1
Target Level	2.2	1.2	1.4	1.5	1.2	-	1.2	-	1.00	-	-	2.2	-	1.33

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BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 7<sup>th</sup>

Subject Name (Code): Mini Project or Internship Assessment (KEN 752)

S No.	Course Outcomes	BL	КС							
Student will be able to:										
1	Understand research papers for exploring new fields and review reporting.	2	С							
2	Evaluate new directions of various cutting edge technologies.	5	Р							
3	Create various skills by preparing detailed project report including all the findings.	6	Р							
4	Effective communication by making an oral presentation to show the findings.	3	Р							
5	Create facts related knowledge by preparing detailed report including outcomes.	6	Р							

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	2	-	2	-	1	-	-	-	-	2	2	-	-
CO-2	3	3	-	2	2	1	2	-	2	-	2	2	I	-
CO-3	3	2	-	3	2	1	2	-	2	-	2	2	-	-
СО-4	-	1	-	1	-	-	-	-	-	3	-	1	-	-
CO-5	-	2	-	1	1	1	2	-	2	-	2	2	-	-
Target Level	3.0	3.0	-	-	2.4	1	-	-	-	3.0	2.0	2.0	-	-

BL-1: Remember BL-2: Understand BL-3: Apply

2

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BL-4: Analyze BL-5: Evaluate BL-6: Create







## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 7<sup>th</sup>

#### Subject Name (Code): Project-I (KEN-753)

S No.	Course	BL	KC
Studen			
1	Demonstrate a sound technical knowledge of their selected project topic.	3	Р
2	Identification of problem, interpretation and solution.	4	Р
3	Formulate engineering solutions to complex problems utilizing a systems approach.	6	М
4	Develop an engineering project and communicate with engineers and the community at large in written and oral forms.	6	М
5	Demonstrate the knowledge, skills and attitudes of a professional engineer as a team.	3	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	1	-	2	-	1	1	1	1	2	2	2	2	1
CO-2	3	2	1	2	-	2	2	-	2	2	3	2	2	2
СО-3	3	2	3	3	-	1	2	2	3	2	3	2	3	3
CO-4	3	2	2	3	3	1	1	-	3	3	3	3	3	3
CO-5	2	1	1	2	-	1	1	-	2	2	2	2	2	2
Target Level	2.8	1.6	1.75	2.4	3	1.2	1.4	1.5	2.2	2.2	2.6	2.2	2.4	2.2

BL-1: Remember BL-2: Understand BL-3: Apply

2

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BL-4: Analyze BL-5: Evaluate BL-6: Create







# The End

BL-1: Remember BL-2: Understand BL-3: Apply

2

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BL-4: Analyze BL-5: Evaluate BL-6: Create



**Department of Electrical & Electronics Engineering** 





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## **Department of Electrical & Electronics Engineering**

4 <sup>th</sup> Semester											
S No.	Subject Code	Subject Name	Page No.								
1	KAS-402	Introduction to Soft Computing	8								
2	KVE-401	Universal Human Values & Professional Ethics	9								
3	KEE-401	Digital Electronics	10								
4	KEE-402	Electrical Machines-I	11								
5	KEE-403	Networks Analysis & Synthesis	12								
6	KEE-451	Circuit Simulation Lab	13								
7	KEE-452	Electrical Machine-I Lab	14								
8	KEE-453	Digital Electronics Lab	15								

	6 <sup>th</sup> Semester											
S No.	Subject Code	Subject Name	Page No.									
1	KEE-601	Power System-II	16									
2	KEE-602	Microprocessor and Microcontroller	17									
3	KEE-603	Power Electronics	18									
4	KEE-061	Special Electrical Machines	19									
5	KOE-067	Basics of Data Base Management	20									
6	KNC-601	Constitution of India, Law and Engineering	21									
7	KOE-069	Understanding the Human Being Comprehensively	22									
8	KEE-651	Power System-II Lab	23									
9	KEE-652	Microprocessor and Microcontroller Lab	24									
10	KEE-653	Power Electronics Lab	25									



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## **Department of Electrical & Electronics Engineering**

8 <sup>th</sup> Semester											
S No.	Subject Code	Subject Name	Page No.								
1	KHU-802	Project Management & Entrepreneurship	26								
2	KOE-083	Entrepreneurship Development	27								
4	KOE-084	Introduction to Smart Grid	28								
5	KOE-091	Automation and Robotics	29								
6	KOE-097	Big Data	30								
7	KOE-099	Human Values in Vedic Darsana	31								
8	KEN-753	Project-II	32								

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#### **Department of Electrical & Electronics Engineering**

#### Session: 2022-23

Semester: 4<sup>th</sup>

#### Subject Name (Code): Introduction to Soft Computing (KNC-601)

S No.	Course Cutcomes	BL	КС								
Studer	Student will be able to:										
1	Comprehend the fuzzy logic and the concept of fuzziness involved in various systems and fuzzy set theory.	1,2	С								
2	Understand the concepts of fuzzy sets, knowledge representation using fuzzy rules, approximate reasoning, fuzzy inference systems, and fuzzy logic.	2,3	С								
3	Describe with genetic algorithms and other random search procedures useful while seeking global optimum in self-learning situations.	4	Р								
4	Understand appropriate learning rules for each of the architectures and learn several neural network paradigms and its applications.	2,3	С								
5	Develop some familiarity with current research problems and research methods in Soft Computing Techniques.	5,6	Р								

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	3	3	3	3	2	-	-	-	-	-	2	2	3
CO-2	3	3	3	3	3	2						2	2	3
CO-3	3	3	3	3	3	2	2		1			2	2	3
CO-4	3	3	3	3	3	2	2		1			2	2	3
CO-5	3	2	3	3	3	2	2		2			2	2	3
Target Level	3	2.8	3	3	3	2	2		1.33			2	2	3



BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate

BL-6: Create

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#### **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 4<sup>th</sup>

#### Subject Name (Code): Universal Human Values & Professional Ethics (KVE-401)

S No.	Course Outcomes	BL	КС
Studen			
1	Understand the essential complementarities between 'VALUES" and 'SKILLS' with its relation of engineering concept.	2	F,C
2	Analyze the sustained happiness and prosperity which are the core aspirations of all human beings keeping social environmental, economic, political scenario.	4	F,C
3	Apply the development of a Holistic perspective among students.	3	С, Р
4	Apply the value-based living in a natural way using technological advancement.	3	C, P
5	Analyze the plausible implications of such a Holistic approach in terms of ethical human conduct, trustful and mutually satisfying human behavior and mutually enriching interaction with nature by using engineering, management principle.	4	F, C

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	-	-	-	-	-	1	3	3	2	1	1	3	-	-
CO-2	-	-	-	-	-	2	3	3	3	2	2	3	-	-
CO-3	-	-	-	-	-	2	3	3	3	3	2	3	-	-
<b>CO-4</b>	-	-	-	-	-	2	3	3	2	1	1	3	-	-
CO-5	-	-	-	-	-	2	3	3	2	2	2	3	-	-
Target Level	-	-	-	-	-	1.8	3	3	2.4	1.8	1.6	3	-	-

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

#### Session: 2022-23

Semester: 4<sup>th</sup>

#### Subject Name (Code): Digital Electronics (KEE-401)

S No.	Course Outcomes	BL	KC
Studen	it will be able to:		
1	Implement logic gates using concepts of binary number system	3	Р
2	Design combinational logic circuits	6	Р
3	Design sequential logic circuits	6	Р
4	Implement the design of synchronous & asynchronous sequential circuits	6	Р
5	Apply the concept of Digital Logic Families in logic circuit-implementation	3	С

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	2	3	2	2	-	-	-	-	-		1	-	1
CO-2	3	3	3	3	3	-	-	-	-	-	1	2	-	1
CO-3	3	3	3	3	3	-	-	-	-	-	1	2	-	2
CO-4	3	3	3	3	3	-	-	-	-	-	1	1	-	2
CO-5	3	3	3	3	3	-	-	-	-	-	1	3	-	3
Target Level	3.0	2.8	3.0	2.8	2.8	-	-	-	-	-	1	1.8	-	1.8

MRC

BL-1: Remember BL-2: Understand BL-3: Apply

**BL-4:** Analyze

**BL-5: Evaluate** 

**BL-6: Create** 

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#### **Department of Electrical & Electronics Engineering**

#### Session: 2022-23

Semester: 4<sup>th</sup>

#### Subject Name (Code): Electrical Machines-I (KEE-402)

S No.	Course Outcomes	BL	KC
Studen	t will be able to:		
1	Classify the various types of Electromechanical Energy devices.	2	С
2	Determine the response of the dc machine on the basis of Armature Reaction and commutation.	3	Р
3	Calculate the performance of dc machine by performing Swinburne' and Hopkinson's test.	3	Р
4	Calculate the performance of single-phase transformer by performing open circuit test, short circuit test and Sumpner's test.	3	Р
5	Understand the different types of 3 phase transformer connections & conversion from 3-phase to 2-phase using Scott's connection.	2	С

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	2	2	-	-	-	-	-	-	-	-	-	2	-	-
CO-2	3	2	1	1	-	-	-	-	-	1	-	3	1	-
CO-3	3	2	1	1	-	-	-	-	-	1	-	3	1	-
CO-4	3	2	1	1	-	-	-	-	-	1	-	3	2	-
CO-5	3	1	1	1	1	-	-	-	-	1	-	3	2	-
Target Level	2.8	1.8	1	1	1	-	-	-	-	1	-	2.8	1.5	-

BL-1: Remember

**BL-2: Understand** 

**BL-3: Apply** 

**BL-4:** Analyze

**BL-5: Evaluate** 

**BL-6: Create** 

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#### **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 4<sup>th</sup>

#### Subject Name (Code): Network Analysis & Synthesis (KEE-403)

S No.	Course Outcomes	BL	KC
Studen	it will be able to:		
1	Apply the knowledge of basic circuital law, nodal and mesh methods of circuit solution through Graph Theory approach.	3	Р
2	Analyze the AC and DC circuits through Kirchhoff's law and Network simplification theorems.	4	Р
3	Analyze steady-state responses and transient response of DC and AC circuits by classical and Laplace transform methods.	4	Р
4	Use the concept of complex frequency and the structure and function of one and two port network.	3	Р
5	Develop one port network and different filters.	6	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	2	1	2	1	-	-	-	-	-	-	3	1	-
CO-2	3	3	2	2	2	-	-	-	-	-	-	3	2	-
CO-3	3	3	2	2	2	-	-	-	-	-	-	3	2	-
CO-4	3	2	1	2	1	-	-	-	-	-	-	3	1	-
CO-5	3	3	3	2	2	-	-	-	-	-	-	3	3	-
Target Level	3	2.6	1.8	2	1.6	-	-	-	-	-	-	3	1.8	-

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BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

#### Session: 2022-23

Semester: 4<sup>th</sup>

#### Subject Name (Code): Circuit Simulation Lab (KEE-451)

S No.	Course Outcomes	BL	KC
Studen	it will be able to:		
1	Apply the knowledge of basic circuital law, nodal and mesh analysis for given circuit.	3	Р
2	Analyze AC and DC circuits using simulation techniques.	4	р
3	Analyze the transient response of AC circuits.	4	р
4	Evaluate the two-port network parameters.	5	Р
5	Estimate the parameters of different filters.	5	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO-2	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO-3	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO-4	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO-5	3	2	-	-	3	-	-	-	1	1	-	1	1	1
Target Level	3	2	-	-	3	-	-	-	1	1	-	1	1	1



BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

#### Session: 2022-23

Semester: 4<sup>th</sup>

#### Subject Name (Code): Electrical Machine-I Lab (KEE-452)

S No.	Course Outcomes	BL	KC
Studen			
1	Perform the speed control of dc motor above and below the rated speed.	3	Р
2	Evaluate the efficiency of dc motor by conducting load test.	5	Р
3	Evaluate the efficiency of transformer by performing load test.	5	Р
4	Evaluate the parameters of equivalent circuit of transformer by conducting short circuit and open circuit test	5	Р
5	Design transformer and dc machine parts using MATLAB	4	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	-	2	2	-	-	-	-	-	1	-	2	-	-
CO-2	2	-	2	-	-	-	-	-	-	-	-	3	-	-
CO-3	3	-	2	2	-	-	-	-	-	1	-	2	1	-
CO-4	3	-	2	2	-	-	-	-	-	1	-	2	1	-
CO-5	3	-	1	1	-	-	-	-	-	1	-	3	-	-
Target Level	2.8	-	1.8	1.4	-	-	-	-	-	1	-	2.6	1	-



BL-1: Remember BL-2: Understand BL-3: Apply

BL-4: Analyze

BL-5: Evaluate

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

#### Session: 2022-23

Semester: 4<sup>th</sup>

#### Subject Name (Code): Digital Electronics Lab (KEE-453)

S No.	Course Outcomes	BL	КС
Studen	it will be able to:		
1	Apply digital binary system it for implementation of Gates.	2, 3	Р
2	Design the Sequential circuits with the help of Combinational circuits and feedback element.	6	Р
3	Design data selector circuits with the help of universal Gates.	6	Р
4	Design the counters with the help of sequential circuit and basic Gates.	6	Р
5	Develop the projects using the digital ICs and electronics components.	3	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	2	3	2	-	-	-	-	-	-	-	2	-	1
CO-2	3	3	3	2	-	-	-	-	-	-	-	2	-	2
CO-3	3	3	3	2	-	-	-	-	-	-	-	3	-	1
CO-4	3	2	2	3	-	-	-	-	-	-	-	2	-	1
CO-5	3	3	3	3	-	-	-	-	-	-	-	3	-	1
Target Level	3	2.6	2.8	2.4	-	-	-	-	-	-	-	2.4		1.2



BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

#### Semester: 6<sup>th</sup>

#### Subject Name (Code): Power System-II (KEE-601)

S No.	Course Outcomes	BL	КС									
Student will be able to:												
1	Analyze the role of components and one line diagram in power system studies including network under both balanced and unbalanced fault conditions	4	Р									
2	Analysis of load flow problem of an electrical power network	4	Р									
3	Apply the concept of travelling wave theory in transmission lines operations	3	Р									
4	Analyze the steady state and transient state stability of the power system under various conditions.	4	Р									
5	Understand the operating principle and applications of a various types of relays and circuit breakers in power systems.	2	С									

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	3	2	2	-	2	-	-	-	-	-	3	-	-
СО-2	3	3	2	2	-	2	-	-	-	-	-	3	-	-
CO-3	3	2	1	2	-	1	-	-	-	-	-	3	-	-
CO-4	3	3	2	2	-	2	-	-	-	-	-	3	-	-
CO-5	2	2	1	1	-	2	-	-	-	-	-	2	-	-
Target Level	2.8	2.6	1.6	1.8	-	1.8	-	-	-	-	-	2.8	-	-

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**BL-1: Remember BL-2: Understand** 

BL-3: Apply

BL-4: Analyze

**BL-5: Evaluate** 

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

#### Session: 2022-23

Semester: 6<sup>th</sup>

#### Subject Name (Code): Microprocessor & Microcontroller (KEE-602)

S No.	Course Outcomes	BL	KC									
Student will be able to:												
1	Understand the basic architecture of 8085 & 8086 microprocessors .	2	С									
2	Illustrate the programming model of microprocessors using 8085 microprocessor.	2	С									
3	Illustrate the interfacing of different external peripheral devices with 8085 microprocessor.	2	С									
4	Understand the architecture of 8051 microcontroller.	2	С									
5	Illustrate advance level microprocessor & microcontroller for different applications	2	С									

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	2	-	-	1	-	-	-	-	1	-	-	1	-	-
CO-2	3	2	1	2	1	-	-	-	2	-	1	2	-	1
CO-3	3	2	1	2	1	-	-	-	2	-	1	2	-	1
CO-4	2	-	-	1	-	-	-	-	1	-	-	1	-	-
CO-5	3	2	1	2	1	-	-	-	2	-	1	2	-	1
Target Level	2.6	2	1	1.6	1	-	-	-	1.6	-	1	1.6	-	1



BL-1: Remember BL-2: Understand BL-3: Apply

**BL-4: Analyze** 

**BL-5: Evaluate** 

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

#### Session: 2022-23

Semester: 6<sup>th</sup>

#### Subject Name (Code): Power Electronics (KEE-603)

S No.	Course Outcomes	BL	KC									
Student will be able to:												
1	Understand the characteristics as well as the operation of BJT, MOSFET, IGBT, SCR, TRIAC and GTO and identify their use in the power switching applications	3	С									
2	Analyze the non-isolated DC-DC converters and identify their use in different Power electronics applications.	3	Р									
3	Evaluate the performance parameters of phase controlled rectifiers	5	Р									
4	Analyze single-phase ac voltage controllers, cyclo-converters and their various applications	4	Р									
5	Analyze the single-phase and three phase bridge inverters, Voltage source inverters and current source inverters	6	Р									

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	3	1	2	2	-	-	-	-	-	-	2	2	2
CO-2	3	3	2	3	3	1	-	-	-	1	1	2	3	2
CO-3	3	3	2	3	2	1	-	-	-	1	1	2	2	3
CO-4	3	3	2	3	3	1	-	-	-	1	2	2	2	3
CO-5	3	3	2	3	2	2	-	-	-	2	2	3	3	1
Target Level	3.00	3.00	1.8	2.8	2.40	1.25	-	-	-	1.25	1.5	2.20	2.4	2.2

BL-1: Remember

BL-2: Understand

BL-3: Apply BL-4: Analyze

BL-5: Evaluate

**BL-6:** Create

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## **Department of Electrical & Electronics Engineering**

#### Session: 2022-23

Semester: 6<sup>th</sup>

#### Subject Name (Code): Special Electrical Machines (KEE-061)

S No.	Course Outcomes	BL	KC									
Student will be able to:												
1	Understand the working principle and constructional Features of different types of electrical machines.	2	С									
2	Analyze the torque- speed characteristics of different electrical machines and interpret their performance.	4	C,P									
3	Apply different types of control techniques for a machine and identify the best control strategy.	3	C,P									
4	Illustrate the use of stepper, BLDCs, SRM, and other special machines in the area of the various industrial and domestic as well as commercial applications.	4	C,P									
5	Understand the concepts of Single phase synchronous motor and characteristics of reluctance and hysteresis motors.	2	F,P									

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	2	2	-	-	-	-	3	-	-	-	-	2	2	2
CO-2	3	2	-	I	-	-	З	I	-	-	-	2	3	2
CO-3	3	3	-	2	-	-	3	-	-	-	-	3	3	3
CO-4	3	3	-	2	-	-	3	-	-	-	-	3	3	3
CO-5	2	-	-	-	-	1	3	-	-	-	-	3	2	-
Target Level	2.6	2.5	-	2	-	1	3	-	-	-	-	2.6	2.6	2.5



**BL-1: Remember BL-2: Understand** 

**BL-3: Apply** 

**BL-4: Analyze** 

**BL-5: Evaluate** 

**BL-6: Create** 

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### **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 6<sup>th</sup>

#### Subject Name (Code): Basics of Data Base Management (KOE-067)

S No.	Course Outcomes	BL	KC									
Student will be able to:												
1	Describe the features of a database system and its application and compare various types of data models.	2	С									
2	Construct an ER Model for a given problem and transform it into a relation database schema.	6	С									
3	Formulate solution to a query problem using SQL Commands, relational algebra, tuple calculus and domain calculus.	6	Р									
4	Explain the need of normalization and normalize a given relation to the desired normal form.	3	Р									
5	Explain different approaches of transaction processing and concurrency control.	2	М									

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	-	-		3	-	-	1	1		1	2		1
CO-2	2	1	3	2	3	-	-	1	-	3	2	1	3	2
CO-3	3	-	-	-	3	-	-	1	-	1	1	1	3	1
CO-4	2	3	-	3	-	-	-	1	-			1	2	1
CO-5	2	3	-	3	-	-	-	1	-			1	1	2
Target Level	2.4	2.33	3	2.66	3	-	-	1	1	2	1.33	1.2	2.25	1.4



**BL-1: Remember** 

**BL-2: Understand** 

**BL-3: Apply** 

**BL-4: Analyze** 

**BL-5: Evaluate** 

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 6<sup>th</sup>

#### Subject Name (Code): Constitution of India, Law and Engineering (KNC-601)

S No.	Course Outcomes	BL	KC									
Student will be able to:												
1	Identify and explore the basic features and modalities about the Indian constitution.	3	С									
2	Differentiate and relate the functioning of Indian parliamentary system at the center and state level.	6	C,P									
3	Differentiate different aspects of the Indian Legal System and its related bodies	2	С									
4	Discover and apply different laws and regulations related to engineering practices.	5	С									
5	Correlate role of engineers with different organizations and governance models	3	С									

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	-	-	-	-	-	2	1	2	2	2	-	-	-	-
CO-2	-	-	-	-	-	2	1	2	2	2	-	-	-	-
CO-3	-	-	-	-	-	3	3	2	2	2	-	-	-	-
CO-4	-	-	-	-	-	2	1	2	2	2	-	-	-	-
CO-5	-	-	-	-	-	2	1	2	2	2	-	-	-	-
Target Level	-	-	-	-	-	2.2	1.4	2	2	2	-	-	-	-



BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

#### Session: 2022-23

Semester: 6<sup>th</sup>

#### Subject Name (Code): Understanding the Human Being Comprehensively (KOE-069)

S No.	Course Outcomes	BL	KC										
Studen	Student will be able to:												
1	Understand the comprehensive human goal of life.	2	С										
2	Understand the harmony of nature and existence.	2	С										
3	Analyze the activities of self in its completeness.	4	Р										
4	Analyze the coexistence in all four orders of nature.	4	Р										
5	Analyze the human traditions from self to entire existence.	4	С										

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	-	-	-	-	-	1	1	2	2	2	1	3	-	-
CO-2	-	-	-	-	-	2	2	1	1	1	1	3	-	-
CO-3	-	-	-	-	-	1	1	3	3	3	2	3	-	-
CO-4	-	-	-	-	-	1	2	2	1	1	1	3	-	-
CO-5	-	-	-	-	-	2	1	3	2	2	1	3	-	-
Target Level	-	-	-	-	-	1.4	1.4	2.2	1.8	1.8	1.2	3	-	-



BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze

**BL-5: Evaluate** 

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

#### Session: 2022-23

Semester: 6<sup>th</sup>

#### Subject Name (Code): Power System-II Lab (KEE-651)

S No.	Course Outcomes	BL	KC
Studen			
1	Compare the different performance characteristics of various relays including data provided by manufacturers.	5	Р
2	Develop programs for load-flow solutions using NR and GS methods.	6	Р
3	Develop programs for various types of faults in power network.	6	Р
4	Demonstrate different numerical integration methods and factors influencing transient stability.	3	Р
5	Determine the effect of load in long transmission line.	3	С

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	3	3	2	-	-	-	-	2	1	-	-	3	-
CO-2	3	3	3	2	3	-	-	-	2	1	-	-	3	-
CO-3	3	3	3	2	3	-	-	-	2	1	-	-	3	-
CO-4	3	3	2	2	2	-	-	-	2	1	-	-	3	-
CO-5	3	3	2	2	-	-	-	-	2	1	-	-	3	-
Target Level	3	3	2.6	2	2.6	-	-	-	2	1	-	-	3	-



BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze

**BL-5: Evaluate** 

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

#### Session: 2022-23

Semester: 6<sup>th</sup>

#### Subject Name (Code): Microprocessor & Microcontroller Lab (KEE-652)

S No.	Course Outcomes	BL	KC											
Studen	Student will be able to:													
1	Understand the microprocessor system.	2	С											
2	Apply the concept of flow chart for understanding the data flow.	3	Р											
3	Apply the concept of assembly language to program microprocessor-based system.	3	Р											
4	Interfacing different peripheral devices with the microprocessor.	6	Р											
5	Understand microcontroller 8051.	2	С											

РО	PO1	PO2	PO 3	PO 4	<b>PO 5</b>	<b>PO 6</b>	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	1	-	-	-	-	-	-	-	-	-	-	1	-	-
CO-2	2	1	-	1	1	-	-	-	-	-	-	2	-	1
CO-3	2	1	-	1	1	-	-	-	2	-	-	2	-	1
CO-4	2	2	1	2	-	-	-	-	2	-	-	3	-	2
CO-5	1	-	-	-	-	-	-	-	-	-	-	1	-	-
Target Level	1.6	1.33	1	1.33	1	-	-	-	2	-	-	1.8	-	1.33



BL-1: Remember BL-2: Understand

**BL-3: Apply** 

**BL-4:** Analyze

**BL-5: Evaluate** 

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 6<sup>th</sup>

#### Subject Name (Code): Power Electronics Lab (KEE-653)

S No.	Course Outcomes	BL	KC									
Student will be able to:												
1	Design and simulation of uncontrolled rectifier circuit.	6	Р									
2	Design and simulation of inverter circuit with R and RL loads	6	Р									
3	Hardware simulation of chopper circuit with DC motor load.	4	Р									
4	Hardware simulation of cycloconverter circuit.	4	Р									
5	Analysis of advance power converters.	4	Р									

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	2	3	3	3	2					2	2	2	2	2
CO-2	2	3	2	2	2					2	2	2	2	2
CO-3	3	3	3	2	3					3	2	2	3	2
CO-4	3	3	3	2	2					2	2	2	2	2
CO-5	2	3	3	3	2					2	2	2	2	2
Target Level	2.4	3	2.8	2.20	2.20					2.20	2	2	2.20	2



BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 8<sup>th</sup>

#### Subject Name (Code): Project Management & Entrepreneurship (KHU 802)

S No.	Course Outcomes	BL	КС
Studen	it will be able to:		
1	Understand the theories of entrepreneurship and Entrepreneurial Development Programs.	2	F
F2	Apply innovative business ideas and market opportunities.	3	Р
3	Apply the importance of Project Management and Project's life cycle	3	Р
4	Analyze project finance and report.	4	Р
5	Analyze social sector perspectives & social entrepreneurship.	4	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	-	-	-	-	-	1	1	2	2	-	3	1	-	-
CO-2	-	-	-	-	-	2	2	3	3	-	3	2	-	-
CO-3	-	-	-	-	-	3	3	2	3	-	3	2	-	-
CO-4	-	-	-	-	-	2	3	2	3	-	3	2	-	-
CO-5	-	-	-	-	-	2	3	3	2	-	3	3	-	-
Target Level	-	-	-	-	_	2	2.4	2.4	2.6	-	3	2	-	-

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23 Semester: 8<sup>th</sup>

Subject Name (Code): Entrepreneurship Development (KOE-083)

S No.	Course Outcomes	BL	KC
Studen	t will be able to:		
1	Understand the growth and role of small-scale industries in the national economy, demand-based and resources, stages in starting a small-scale industry.	2	С
2	Apply for assessment of the viability, formulation, financing, field study, demand analysis, material balance, output methods, and benefit- cost analysis.	3	С
3	Analyze the preparation of balance sheets and assessment of economic viability, decision making, expected costs wages and incentive, inventory control, and preparation of financial reports.	4	Р
4	Understand the financial functions, cost of capital approach in project planning, risk analysis, capital expenditures profit planning, and control of financial flows.	2	Р
5	To apply partnership laws, business ownership, sales, income taxes, and workman compensation act.	3	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	1	-	-	-	-	-	1	3	3	2	3	2	-	-
CO-2	2	-	-	I	1	I	2	3	3	2	3	2	-	-
CO-3	2	-	-	-	2	-	2	1	3	3	3	2	-	-
CO-4	1	-	-	I	2	-	2	2	3	3	3	2	-	-
CO-5	1	-	-	I	I	I	1	3	3	2	3	2	-	-
Target Level	1.4	-	-		1.66	-	1.6	2.4	3	2.4	3		-	-



**BL-1: Remember** 

**BL-2: Understand** 

**BL-3: Apply** 

**BL-4: Analyze** 

**BL-5: Evaluate** 

**BL-6: Create** 

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# **KIET Group of Institutions, Ghaziabad**

## **Department of Electrical & Electronics Engineering**

Session: 2022-23

#### Semester: 8<sup>th</sup>

#### Subject Name (Code): Introduction to Smart Grid (KOE-084)

S No.	Course Outcomes	BL	KC
Studen	t will be able to:		
1	Understand the basic concepts, definitions, functions and opportunities of Smart Grid.	2	С
2	Analyze Smart Meters, AMR, Hybrid Vehicles, V2G and Automation.	4	F
3	Analyze the concept of various Smart Grid Technologies.	5	С
4	Analyze the concept of Microgrid and Distributed Energy Resources.	5	С
5	Analyze Power Quality issues and Management in Smart Grid.	5	С

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	1	3	2	3	2	-	1	-	-	2	2	3	1	2
CO-2	-	3	2	3	3	-	2	-	-	3	2	3	3	3
CO-3	1	3	3	3	2	-	2	-	-	2	3	3	2	2
CO-4	2	3	3	2	3	-	2	-	-	3	3	3	3	3
CO-5	2	3	3	3	3	-	2	-	-	3	3	3	3	3
Target Level	1.5	3	2.6	2.8	2.6	-	1.8	-	-	2.6	2.6	3	2.4	2.6

BL-1: Remember

**BL-2: Understand BL-3: Apply** 

BL-3: Apply BL-4: Analyze

BL-5: Evaluate

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 8<sup>th</sup>

#### Subject Name (Code): Automation & Robotics (KOE-091)

S No.	Course Outcomes	BL	КС
Studen	t will be able to:		
1	Classify advantages, goals, types, need laws and principles of automation	2	С
2	Describe classification and types of automatic transfer machines	2	С
3	Explain classification of robots and laws of robotics	2	Р
4	Analyze robot drive mechanisms	4	Р
5	Explain methods of robot programming and simulation concept.	4	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	2	1	1	1	-	-	-	-	-	-	1	3	-	-
CO-2	2	1	1	1	-	-	-	I	-	-	1	3	-	-
CO-3	2	1	1	1	-	I	I	I	-	-	1	3	-	-
CO-4	3	2	1	2	2	-	I	-	-	-	2	3	-	-
CO-5	3	2	1	2	2	-	-	-	-	-	1	3	-	-
Target Level	2.4	2	1	1.4	2						1.2	3	-	-

BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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## **Department of Electrical & Electronics Engineering**

Session: 2022-23

Semester: 8<sup>th</sup>

Subject Name (Code): Big Data (KOE-097)

S No.	Course Outcomes	BL	КС
Studen	it will be able to:		
1	Understand fundamentals of Big Data analytics	2	F,C
2	Application of Hadoop and map reduce frameworks	2	Р
3	Analyzing Hadoop Distributed File System with simple JAVA and Hadoop I/O	2	C,P
4	UndeOrstand NoSQL MongoDB, spark and scala for Big Data	2	F,C
5	Inspect the big data using programming tools like Pig, Hive and HBase.	2	C,P

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	2	3	2	3	3	-	-	3	-	1	-	3	-	-
CO-2	2	3	2	3	3	-	-	-	-	1	-	3	-	-
CO-3	2	3	2	3	3	-	I	-	-	1	-	3	-	-
<b>CO-4</b>	2	3	3	3	3	-	I	-	-	1	-	3	-	-
CO-5	2	3	3	3	3	-	I	-	-	1	-	3	-	-
Target Level	2	3	2.4	3	3	-	-	3	-	1	-	3	-	-



**BL-1: Remember BL-2: Understand** 

BL-2: Ondersta BL-3: Apply

BL-4: Analyze

BL-5: Evaluate

**BL-6: Create** 

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## **Department of Electrical & Electronics Engineering**

#### Session: 2022-23

#### Semester: 8<sup>th</sup>

#### Subject Name (Code): Human Values in Vedic Darsana (KOE-099)

S No.	Course Outcomes	BL	KC
Studen	t will be able to:		
1	Understand the need and importance of Vedic Literature with Nyay Darsana	2	С
2	Understand the basics of Vaisesika Darsana	2	С
3	Understand the philosophy of spirituality with Samkhya & Yoga Darsana	2	Р
4	Understand the philosophy of the God with the Upanisad & the Vedant Darsana	2	С
5	Understand the purpose and program for a human being based on Vedic Darsana.	2	С

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	<b>PO 8</b>	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	-	-	-	-	-	1	2	1	-	-	1	2	-	-
CO-2	-	-	I	-	-	1	-	1	-	1	1	2	-	-
CO-3	-	-	-	-	-	2	2	2	1	1	1	2	-	-
CO-4	-	-	-	-	-	1	1	1	-	-	-	2	-	-
CO-5	-	-	-	-	-	1	2	1	1	1	1	2	-	-
Target Level	-	-	-	-	-		2		1	1	1	2	-	-

BL-1: Remember BL-2: Understand

**BL-3: Apply** 

**BL-4:** Analyze

**BL-5: Evaluate** 

**BL-6: Create** 

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# **Department of Electrical & Electronics Engineering**

Session: 2022-23

#### Semester: 8th

Subject Name (Code): Project-2 (KEN-753)

S No.	Course Outcomes	BL	КС
Studen	it will be able to:		
1	Demonstrate a sound technical knowledge of their selected project topic.	3	Р
2	Identification of problem, interpretation and solution.	4	Р
3	Formulate engineering solutions to complex problems utilizing a systems approach.	6	М
4	Develop an engineering project and communicate with engineers and the community at large in written and oral forms.	6	М
5	Demonstrate the knowledge, skills and attitudes of a professional engineer as a team.	3	Р

РО	PO1	PO2	PO 3	PO 4	PO 5	PO 6	<b>PO 7</b>	PO 8	PO 9	PO10	PO 11	PO 12	PSO1	PSO2
CO-1	3	1	-	2	-	1	1	1	1	2	2	2	2	1
CO-2	3	2	1	2	-	2	2	-	2	2	3	2	2	2
CO-3	3	2	3	3	-	1	2	2	3	2	3	2	3	3
CO-4	3	2	2	3	3	1	1	-	3	3	3	3	3	3
CO-5	2	1	1	2	-	1	1	-	2	2	2	2	2	2
Target Level	2.8	1.6	1.75	2.4	3	1.2	1.4	1.5	2.2	2.2	2.6	2.2	2.4	2.2



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BL-1: Remember BL-2: Understand BL-3: Apply BL-4: Analyze BL-5: Evaluate BL-6: Create

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**Department of Electrical & Electronics Engineering** 

# The End

BL-1: Remember BL-2: Understand BL-3: Apply

2

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BL-4: Analyze BL-5: Evaluate BL-6: Create







ARIIA ATAL RANKING OF INSTITUTIONS ON INNOVATION ACHIEVEMENTS

2<sup>nd</sup> Rank "Private Institutions (Technical)" in India by ARIIA 2021 Ranking

#### **Department of Mechanical Engineering**

**Course Outcomes** 

## Session (2022-23)

Course Name: Energy Science	C201	Course Year: II	2022-23
Course			

Sr. No	Course Outcomes	BL
Students v	vill be able to:	
C201.1	Understand the basics concepts of Energy and its Usage.	2
C201.2	Understand the concepts of nuclear energy, nuclear reactors and its safety Operation.	2
C201.3	Apply the use of solar energy and its generations for solar photovoltaic devices etc.	3
C201.4	Apply the use of Conventional & non-conventional energy sources for different power plant.	3
C201.5	Analyze the Systems and Synthesis for Green energy, green buildings etc. and environment impact assessment.	4

Course Name: Technical C202 C		Course Year: II	2022-23
Communication- KAS 301			

Sr. No	Course Outcomes	BL	
Students will be able to:			
C202.1	Analyze the nature and objectives of Technical Communication relevant for workplace as Engineer.	4	
C202.2	Utilize the technical Writing Skills for the purpose of Technical		
	Communication and its exposure in various dimensions.	3	
C202.3	Imbibe presentation strategies inputs with confidence in facing diverse		
	audience in required situations at workplace.	3	
C202.4	Estimate the application of Technical Communication to promote their		
	competence for various media like report generation, resume design, GD,		
	and Interview etc.	5	
C202.5	Evaluate Voice dynamics and select appropriate cues for their own efficacy		
	as fluent and efficient communicators.	5	

Course Name: Thermodynamics	C203	Course Year: II	2022-23
KME301			

Sr. No	Course Outcomes	BL
C203.1	Understand the thermodynamic systems, Properties, Cycle and different	2

	forms of energy, state different laws of thermodynamics and apply first law of thermodynamics on steady and non steady flow devices	
C203.2	Understand and analyze the working of Refrigerator, Heat Pump and Heat Engine and application of second law of thermodynamic. Understand the Principle of Increase of Entropy and evaluate the Quality of Energy.	2
C203.3	Analyze the availability & Unavailability of thermal system, second law efficiency and various thermodynamics relations.	4
C203.4	Apply knowledge to solve problems related to steam, analyze p-V and T-s diagram and understand the psychometric processes	3
C203.5	Analyze the refrigeration cycles, refrigerants and refrigeration systems.	4

Course Name: Fluid Mechanics &	C204	Course Year: II	2022-23
Fluid Machines – KME 302			

Sr. No	Course Outcomes	BL
C204.1	Understand the basics of fluid mechanics, Bernoulli's equation and its application	2
C204.2	Analyze different types of flow, continuity equation and Buckingham's Pi theorem for dimensional analysis and apply these concepts to solve problems	4
C204.3	Analyze laminar and turbulent flow, losses in pipes, boundary layer theory and forces on submerged bodies and apply this knowledge to solve the problems	4
C204.4	Apply the principle of impact of jet and working of different types of turbines and evaluating the suitable turbines under different conditions	3
C204.5	Apply the principle and working of different types of pumps and other hydraulic devices evaluating the suitable pump under different conditions	3

Course Name: Material	C205	Course Year: II	2022-23
Engineering- KME 303			

Sr. No	Course Outcomes	BL
C205.1	Analyse the properties of ferrous and non-ferrous materials.	4
C205.2	Analyse the mechanism of material failure under different loading.	4
C205.3	Analyse the microstructure properties and phase diagram of engineering Materials.	4
C205.4	Apply heat treatment method to modify the material properties.	3
C205.5	Analyse effect of different alloying elements on the properties of ferrous and	
	nonferrous alloys.	4

Course Name: Fluid Mechanics	C206	Course Year: II	2022-23
Lab- KME 351			

Sr. No	Course Outcomes	BL
C206.1	Apply the concept of the Impact of jet and orifice meter.	3
C206.2	Analyze different types of notches and and major losses in pipes	4
C206.3	Apply the concept of venturimeter, Bernoulli's theorem and Reynold's	
	experiment.	3

C206.4	Analyze the concept of equilibrium of floating bodies and minor losses in	
	pipes	4

Course Name: Material Testing	C207	Course Year: II	2022-23
Lab- KME 352			

Sr. No	Course Outcomes	BL
C207.1	Test the mechanical properties of material on Universal testing machine and also able to analyse test results.	4
C207.2	Evaluate materials' hardness and also able to analyse effect of different processes on hardness.	5
C207.3	Evaluate the toughness of materials by izod and charpy test.	5
C207.4	Analyse the effect of heat treatment on the same.	4
C207.5	Evaluate the modulus rigidity through torsion test and able to analyse fatigue failure of the material using Fatigue test	5

Course Name: Computer Aided	C208	Course Year: II	2022-23
Machine Drawing Lab-KME 353			

Sr. No	Course Outcomes	BL
C208.1	Understand and analyse the different kinds of engineering drawing symbols as per BIS Codes with classification of Drawings: Machine drawings etc	2
C208.2	Analyse the limit, fits and tolerance system and its application in machine	
	drawing	4
C208.3	Create the 3D models using the basic concept of 2D modelling	6
C208.4	Draw the assembly of machine with the help of different detailed drawing of	
	machine components	6
C208.5	Create the cut section view of machine assembly using CAD software	6

Course Name: Mini Project or	C209	Course Year: II	2022-23
Internship- KME 354			

Sr. No	Course Outcomes	BL
C209.1	Apply Technical students to the industrial environment, which cannot be	
	simulated in the classroom and hence creating competent professionals in	
	the industry.	3
C209.2	Understand possible opportunities to learn, understand and sharpen the real	
	time technical /managerial skills required at the job.	2
C209.3	Apply the current technological developments relevant to the subject area	
	of training.	3
C209.4	Apply the experience gained from the 'Industrial Internship' in discussions	
	held in the classrooms.	3
C209.5	Create conditions conducive to quest for knowledge and its applicability on	
	the job.	6

Course Name: Python	C210	Course Year: II	2022-23
Programming- KNC 302			

Sr. No	Course Outcomes	BL
C210.1	Understand read and write simple Python programs.	2
C210.2	Apply the concept of conditionals and loops in Python programs.	3
C210.3	Analyse Python functions and use Python in data structures lists, tuples, dictionaries.	4
C210.4	Understand input/output with files in Python.	2
C210.5	Apply the concept of searching, sorting and merging in Python.	3

Course Name: MATHEMATICS III	C211	Course Year: II	2022-23
KAS 402			

Sr. No	Course Outcomes	BL
C211.1	Study the methods to solve Partial Differential Equations	1
C211.2	Apply the concept of method of separation of variables to solve wave, heat, Laplace and transmission equations.	3
C211.3	Evaluate Moments, M,G.F Correlations, linear regression.	5
C211.4	Apply the concept of probability to solve discrete and continuous probability distributions.	3
C211.5	Apply the concept of sampling to study t-test, F-test and Chi-square test, One way Analysis of Variance (ANOVA).	3

Course Name: Universal Human	C212	Course Year: II	2022-23
Values & Professional Ethics-			
KVE401			

Sr. No	Course Outcomes	BL
C212.1	Understand difference between values and skills, need and process of value	2
	education, meaning of nappiness and prosperity.	
C212.2	Understand the difference between the Self and the Body, the meaning of	2
	Harmony in the Self "the Co-existence of Self and Body".	
C212.3	Analyze the values of harmonious relationship based on trust, respect and	4
	other naturally acceptable feelings in human-human relationships , their role	
	in ensuring a harmonious society.	
C212.4	Analyse the harmony in nature and existence, their mutually fulfilling	4
	participation in the nature.	
C212.5	Decide the role of holistic understanding of harmony on professional ethics.	5

Course Name: Applied	C213	Course Year: II	2022-23
Thermodynamics- KME 401			

Sr. No	Course Outcomes	BL
C213.1	Analyse the basic power cycles and performance of I.C engines	4
C213.2	Analyze the process of combustion of fuel and formation of flue gases.	4

C213.3	Understand the working and performance of boiler, draught and condenser.	2
C213.4	Analyse the design and working of nozzles and steam turbines.	4
C213.5	Understand the principle, working & performance of gas turbines and jet	
	propulsion.	2

Course Name: Engineering	C214	Course Year: II	2022-23
Mechanics- KME 402			

Sr. No	Course Outcomes	BL
C214.1	Apply the effect of applied, non applied and frictional forces on rigid bodies/body.	3
C214.2	Analysis the statically determinate truss/beams under various loading conditions.	4
C214.3	Calculate centroid/moment of inertia of composite body.	5
C214.4	Analysis of displacement, velocity, acceleration etc of rigid body under dynamic condition with or without consideration of applied forces.	4
C214.5	Analysis of stresses and its effect on under applied load on one dimensional bodies, beams and shafts.	4

Course Name: Manufacturing	C215	Course Year: II	2022-23
Processes- KME 403			

Sr. No	Course Outcomes	BL
C215.1	Analyze the various primary manufacturing processes.	4
C215.2	Analyze the phenomenon of metal cutting process	4
C215.3	Analyze grinding and different types of super finishing operations	4
C215.4	Apply the knowledge of various welding processes and their thermodynamic and metallurgical aspects.	3
C215.5	Understand the concepts of non-conventional machining processes.	2

Course Name: APPLIED	C216	Course Year:II	2022-23
THERMODYNAMICS LAB- KME 451			

Sr. No	Course Outcomes	BL
C216.1	Understand the construction and working of fire tube and water tube boilers,	2
	their parts, differences, mountings and accessories.	
C216.2	Understand the construction and working of two-stroke, four-stroke petrol and diesel engines, their parts, working strokes and applications.	2
C216.3	Understand the construction and working of steam engine, its components and the modified Rankine cycle.	2
C216.4	Understand the construction and working of the steam turbines, its types, differences between impulse & reaction turbine and the compounding od impulse turbines.	2
C216.5	Understand the construction and working of gas turbine and its types, working and process of Brayton's cycle.	2

Course Name: Manufacturing	C217	Course Year: II	2022-23
Process Lab - KME 452			

Sr. No	Course Outcomes	BL
C217.1	Apply the casting process and remember various elements of gating system	3
C217.2	Apply different operations of lathe machine	3
C217.3	Apply different operations of milling machine	3
C217.4	Apply different operations of shaper machine	3
C217.5	Apply the concept of welding operations in welding shop	3

Course Name: CAMD Lab- KME	C218	Course Year: II	2022-23
453			

Sr. No	Course Outcomes	BL
C218.1	Understand the different types of Engineering Drawing and BIS Codes.	2
C218.2	Analyse the interchangeability system and its requirement in machine drawing	4
C218.3	Understand & drafting the 3D/2D machine and allied component.	2
C218.4	Interpret and understand sketching the different machine components analysis on drawing software.	4
C218.5	Understand the sketching part Modelling & Assemblies.	2

Course Name: Heat & Mass	C301	Course Year:	2022-23
Transfer- KME 501			

Sr. No	Course Outcomes	BL
C301.1	Analyze the basic laws and mechanism of different mode of heat transfer and differential governing equations for conduction.	4
C301.2	Evaluate amount of heat transfer through Fins and understand the transient heat conduction.	5
C301.3	Analysis of heat transfer through convection for different type of surface and also understand the difference between natural and forced convection.	4
C301.4	Analyze the basic laws and principles of radiation and implement them for the evaluation of equations and problems of heat transfer through radiations.	4
C301.5	Summarize heat exchanger phenomenon of parallel and counter flow and also remember the phenomenon of condensation, boiling and fundamentals of mass transfer.	4

Course Name: Strength of	C302	Course Year:	2022-23
Materials- KME 502			

Sr. No	Course Outcomes	BL
C302.1	Analyse the effect of applied load on the solid body under various loading conditions.	4
C302.2	Evaluate stresses and deflection by various methods on beams and shafts	5

C303.3	Analyse spring and column under various loading conditions	4
C304.4	Analyse the stresses developed in pressure vessels	4
C305.5	Apply the concept of bending stresses on curved and unsymmetrical beams .	3

Course Name: Industrial	C303	Course Year:	2022-23
Engineering-KME 503			

Sr. No	Course Outcomes	BL
C303.1	Analyze the concept of production system, productivity, facility and process planning in various industries.	4
C303.2	Apply the various forecasting and project management techniques.	3
C303.3	Analyze the concept of breakeven analysis, inventory control and resource utilization using queuing theory.	4
C303.4	Apply principles of work study and ergonomics for design of work systems.	3
C303.5	Formulate the mathematical models for optimal solution of industrial problems using linear programming approach.	5

Course Name: CIM- KME 051	C304	Course Year:	2022-23

Sr. No	Course Outcomes	BL
C304.1	Analyse the basic concepts of automation, computer numeric control machining.	4
C304.2	Apply the algorithms of line generation, circle generation, transformation, curve, surface modeling and solid modeling	3
C304.3	Analyse group technology, computer aided process planning, flexible manufacturing, Industry 4.0, robotics	4
C304.4	Analyse information system and material handling in CIM environment, rapid prototyping	4
C304.5	Illustrate Group Technology, FMS concepts	4

Course Name: Mechatronic	C305	Course Year:	2022-23
Systems- KME 052			

Sr. No	Course Outcomes	BL
C305.1	Identify key elements of mechatronics and its representation by block	
	diagram.	4
C305.2	Understand the concept of sensors and use of interfacing systems.	2
C305.3	Understand the concept and applications of different actuators.	2
C305.4	Illustrate various applications of mechatronic systems.	4
C305.5	Design PLC ladder programming and implementation in real life problem.	5

Course Name: FEM- KME 053C306Course Year:2022-23

Sr. No	Course Outcomes	BL
C306.1	Understand the basic procedure to solve the FEM problem.	2
C306.2	Understand strain displacement relation and apply various approximate	2

	methods for solution.	
C306.3	Apply Finite Element Methods to elasticity problems and heat conduction	
	Problems.	3
C306.4	Analyze One dimensional problem, Plane trusses, Beams and Frames using	
	FEM.	4
C306.5	Solve Two dimensional problem using FEM and to understand Practical	
	consideration in finite element applications.	5

Course Name: Automotive	C 307	Course Year:	2022-23
Engines & Combustion- KAU 051			

Sr. No	Course Outcomes	BL
C307.1	Apply the concepts of thermodynamics to air standard cycle in IC Engines & knowledge about performance parameters and testing of IC engine.	3
C307.2	Understand the phenomena of Flames Propagation & Stoichiometry relations.	2
C307.3	Understand the phenomena of combustion and its application in SI and CI engines & Understand the essential system of IC engine	2
C307.4	Understand the concept of carburetion, fuel injection for SI Engine and knowledge about latest trends & developments in IC Engines.	2
C307.5	Understand the effect of engine emission on the environment and human health and methods of reducing it.	2

Course Name: Advanced Welding-	C308	Course Year:	2022-23
KME 055			

Sr. No	Course Outcomes	BL
C308.1	Understand the physics of arc welding process and various operating	
	characteristics of welding power source.	2
C308.2	Understand various welding processes and their applications.	2
C308.3	Apply heat flow in welding and physical metallurgy of weldments.	3
C308.4	Understand the knowledge of welding for repair & maintenance, along with	
	the weldability of different materials.	2
C308.5	Understand the concept of weld design and testing of weldments in	
	industrial environment.	2

Course Name: Programming, Data	C309	Course Year:	2022-23
Structures and Algorithms using			
Python- KME 056			

Sr. No	Course Outcomes	BL
C309.1	Understand the numbers, math's function, strings, list, tuples, and dictionaries in pythons.	2
C309.2	Apply conditional statement and functions in python.	3
C309.3	Apply file handling techniques in python.	3
C309.4	Analyze the graphical demonstration in python.	4
C309.5	Apply techniques of Classes and Object Concept in Python.	3

Course Name: Mechanical	C310	Course Year:	2022-23
Vibration- KME 057			

Sr. No	Course Outcomes	BL
C310.1	Understand fundamentals of mechanical vibrations along with their classification.	2
C310.2	Differentiate among single, two and multiple degree of freedom (DOF) systems.	4
C310.3	Analyze, predict and measure the performance of systems undergoing single, two and multiple DOF.	4
C310.4	Design systems with optimized vibration absorption capabilities.	6
C310.5	Apply the fundamentals to the real life problems like whirling of shaft.	3
C310.6	Solve complicated mathematical models using Numerical methods and software applications.	5

Course Name: Automotive Chasis	C311	Course Year:	2022-23
& Suspension- KAU 052			

Sr. No	Course Outcomes	BL
C311.1	Understand different types of automotive chassis and frames used in automobiles.	2
C311.2	Analysis of transmission and drive line components used in automobiles.	4
C311.3	Evaluate the performance of axles and types of steering system in	
	automobiles.	5
C311.4	Analysis of braking and suspension system of automobiles.	4
C311.5	Design and Analysis of the wheels and tyres & recent advancements made in	
	components of automobiles.	6

Course Name: Indian Tradition,	C312	Course Year:	2022-23
Culture & Society (ITCS)- KNC 502			

Sr. No	Course Outcomes	BL
C312.1	Understand the roots of the contemporary issues faced by our nation and try to locate possible solutions to these challenges by digging deep into our past.	2
C312.2	Understand the importance of our surroundings and encourage the students to contribute towards sustainable development.	2
C312.3	Explain the holistic life styles of Yogic-science and apply wisdom capsules in Sanskrit literature that are important in modern society with rapid technological advancements and societal disruptions.	2
C312.4	Understand the issues related to 'Indian' culture, tradition and its composite character.	2
C312.5	Apply the Indian Knowledge System, Indian perspective of modern scientific world-view and basic principles of Yoga and holistic health care system.	3

Course Name: Heat & Mass	C313	Course Year:	2022-23
Transfer Lab- KME 551			

Sr. No	Course Outcomes	BL
C313.1	Apply the basic principle of conduction and convection on various elements and also evaluate the amount of heat flow through rod in conduction and convection	2
	convection.	5
C313.2	Summarize the comparative study about the quantity of heat transfer	
	between fluids and solid boundaries.	4
C313.3	Analyze the principle of combined heat transfer and evaluate the amount of	
	heat exchanged between fluids flowing within heat exchangers	4
C313.4	Built the ability to carry out simple experimental work in irradiative heat and	
	to understand its application.	2

Course Name: Python Lab- KME	C314	Course Year:	2022-23
552			

Sr. No	Course Outcomes	BL
C314.1	Apply conditional statement, loops condition and functions in python	
	program.	3
C314.2	Solve mathematical and mechanical problems using python program	5
C314.3	Plot various type of chart using python program	5
C314.4	Analyze the mechanical problem using python program	4

Course Name: IOT Lab- KME 553	C310	Course Year:	2022-23

Sr. No	Course Outcomes	BL
C315.1	Understand the concept of Internet of Things.	2
C315.2	Implement interfacing of various sensors with Arduino/Raspberry Pi.	4
C315.3	Demonstrate the ability to transmit data wirelessly between different	
	devices.	5
C315.4	Show an ability to upload/download sensor data on cloud and server.	5
C315.5	Hardware interfacing of Arduino with wifi modules.	4

Course Name: Mini	C316	Course Year:	2022-23
Project/Internship Assessment-			
KME 554			

Sr. No	Course Outcomes	BL
C316.1	Apply technical knowledge to the students to cope with industrial environment, which can not be simulated in the classroom and hence	
	creating competent professionals in the Industry.	3
C316.2	Understand possible opportunities to learn , understand and sharpen the real time technical /managerial skills required at job.	2
C316.3	Apply the current technological developments relevant to subject area of training.	3
C316.4	Apply the experience gained from the industrial internship in the discussion	3

	held in the classrooms.	
C316.5	Create conditions conducive to quest for knowledge and its applicability on	
	the job.	6

Course Name: Refrigeration & Air	C317	Course Year:	2022-23
Conditioning- KME 601			

Sr. No	Course Outcomes	BL
C317.1	Analyze the performance of air refrigeration systems.	4
C317.2	Analyze the performance of vapor compression refrigeration systems.	4
C317.3	Analyze the performance of vapor absorption refrigeration system, categorize the refrigerants and describe the properties of refrigerants.	4
C317.4	Analyze different psychrometric processes and examine the cooling load calculation.	4
C317.5	Illustrate the working of different refrigeration and air-conditioning equipments, non-conventional refrigeration systems and cold storage.	4

Course Name: Machine Design-	C318	Course Year:	2022-23
KME602			

Sr. No	Course Outcomes	BL
C318.1	Design the machine components against static and fatigue loading.	6
C318.2	Design the riveted joint, welded joint and shafts.	6
C318.3	Design the sliding and rolling contact bearing	6
C318.4	Design the spur and helical gear.	6
C318.5	Design of clutch and engine cylinder and piston.	6

Course Name: Theory of Machine-	C319	Course Year:	2022-23
KME 603			

Sr. No	Course Outcomes	BL
C319.1	Calculate velocity and acceleration for 4 bar and slider crank mechanism.	3
C319.2	Develop cam profiles for different motion of followers and apply the concepts of gears.	6
C319.3	Apply the static and dynamic force analysis of four bar mechanism and slider crank mechanism.	3
C319.4	Apply the concept of static and dynamic balancing and principles of governors.	3
C319.5	Apply the principle of brakes, dynamometer and gyroscope and understand it's working.	3

Course Name: Non- Destructive	C320	Course Year:	2022-23
Testing- KME 061			

Sr. No	Course Outcomes	BL
C320.1	Apply the concept of visual inspection method in detecting surface defects.	3

C320.2	Apply the concept of penetrant testing method and magnetic particle testing method for detecting surface and sub surface flaws	3
C320.3	Apply the concept of radiographic testing method for detecting internal	3
	defects.	
C320.4	Apply the principles of Ultrasonic testing in medical and engineering areas for	3
	detecting internal flaws.	
C320.5	Apply the concept of eddy current testing method for detecting flaws.	3

Course Name: Artificial	C321	Course Year:	2022-23
Intelligence- KME 062			

Sr. No	Course Outcomes	BL
C321.1	Understand the key components of the artificial intelligence field and its importance in Mechanical Engineering in terms of intelligent agents.	2
C321.2	Analyze the problem as a state space, graph, design heuristics and selection of different search or game-based techniques to solve them.	4
C321.3	Apply the fundamentals of knowledge representation and evaluate the working knowledge of reasoning in the presence of incomplete and/or uncertain information.	3
C321.4	Apply machine learning techniques to real-world problems on both complete and hidden data.	3
C321.5	Create the basics of pattern recognition process, classification techniques and apply the same on real world problems	6

Course Name: Tribology	C322	Course Year:	2022-23

Sr. No	Course Outcomes	BL
C322.1	Identify and explain various friction and wear mechanisms.	4
C322.2	Selection of proper lubricants for different applications.	4
C322.3	Selection of suitable lubrication methods in different bearings	4
C322.4	Study the surfaces coating techniques for reduction of wear.	2
C322.5	Analyze the impact of friction in various kinematic pairs.	4

Course Name: Automotive	C323	Course Year:	2022-23
Electrical & Electronics- KAU 061			

Sr. No	Course Outcomes	BL
C323.1	Understand the basic concepts of electrical systems and features of charge storage devices and methods to test these devices	2
C323.2	Apply the principles and characteristics of charging and starting system of automobile	3
C323.3	Analyze the ignition and auxiliary system- types & constructional features used in automobile	4
C323.4	Understand the principles and architecture of electronics systems and its components present in an automobile	2
C323.5	Analyse the latest trends developed in electrical and electronic systems of automobile.	4

Course Name: Software Project	C324	Course Year:	2022-23
Management- KOE 068			

Sr. No	Course Outcomes	BL
C324.1	Identify project planning objectives, along with various cost/effort estimation models.	5
C324.2	Organize & schedule project activities to compute critical path for risk analysis.	2
C324.3	Monitor and control project activities.	2
C324.4	Formulate testing objectives and test plan to ensure good software quality under SEI-CMM.	5
C324.5	Configure changes and manage risks using project management tools.	5

Course Name: Constitution of	C325	Course Year:	2022-23
India			

Sr. No	Course Outcomes	BL
C325.1	Identify and explore the basic features and modalities about Indian constitution.	5
C325.2	Differentiate and relate the functioning of Indian parliamentary system at the center and state level.	4
C325.3	Differentiate different aspects of Indian Legal System and its related bodies.	4
C325.4	Discover and apply different laws and regulations related to engineering practices.	3
C325.5	Correlate role of engineers with different organizations and governance models	4

Course Name: RAC Lab	C326	Course Year:	2022-23
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Sr. No	Course Outcomes	BL
C326.1	Demonstrate the working of refrigeration and air-conditioning systems and its various components.	2
C326.2	Analyze the performance parameters of refrigeration and air-conditioning systems.	4
C326.3	Analyze the performance parameters of a two-stage air compressor.	4
C326.4	Analyze the performance parameters of an air washer.	4

Course Name: MD Lab	C327	Course Year:	2022-23
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Sr. No	Course Outcomes	BL
C327.1	Apply the principles of solid mechanics to design various machine Elements subjected to static and fluctuating loads.	3
C327.2	Write computer programs and validate it for the design of different machine elements	1
C327.3	Evaluate designed machine elements to check their safety.	5

Course Name: TOM Lab	C328	Course Year:	2022-23
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Sr. No	Course Outcomes	BL
C328.1	Demonstrate various mechanisms, their inversions.	2
C328.2	Apply cam-follower mechanism to get desired motion of follower.	3
C328.3	Apply the concepts of gears and gear train to get desired velocity ratio for power transmission.	3
C328.4	Apply the concept of governors to check their stability and sensitivity.	3
C328.5	Determine the balancing load in static and dynamic balancing problem and whirling speed of shafts.	4
C328.6	Apply the principal of gyroscopic couple on Motorized Gyroscope and its verification.	3

Course Name:	C401	Course Year:	2022-23
Project management &			
Entrepreneurship- KHU 702			

		1
Sr. No	Course Outcomes	BL
C401.1	Understand the basic concept of Entrepreneurship, its need and scope of implementation; Factors affecting entrepreneurial development;	
	Entrepreneurial motivation theories and Classification of entrepreneurs with EDP.	2
C401.2	Create Entrepreneurial Idea and Identify Business Opportunities,	
	Management skills for Entrepreneurs and managing for Value Creation;	
	Sustaining Enterprising Model & Organizational Effectiveness.	6
C401.3	Understand the Project management; project life-cycle, Project appraisal and	
	creation of a real time project feasibility report containing Technical,	
	Environmental, Market and managerial appraisal.	2
C401.4	Understand the concept of project cost estimation and working capital requirements, source of funds, capital budgeting process and creation of projected financial statements viz. Projected balance sheet, projected income statement, projected funds & cash flow statements, and detailed	
	project report.	2
C401.5	Understand the perspectives of social sector, Social Entrepreneurship, opportunities and models, marketing management for Social Ventures, Risk	
	Management in Social Enterprises, Legal Framework for Social Ventures.	2

Course Name: Renewable Energy	C402	Course Year:	2022-23
Resource- KOE 074			

Sr. No	Course Outcomes	BL
C402.1	Understand the significance of various non-conventional energy resources, their availability and Limitations	2
C402.2	Design and analyse of solar thermal collectors to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, manufacturability, and sustainability	6
C402.3	Apply the modern engineering techniques such Magneto-hydrodynamics (MHD) generator and fuel cell for non conventional energy resources	3
C402.4	Evaluate the impact of wind energy resources and plants as an engineering	5

	solution in societal and environmental context in order to have sustainable development	
C402.5	Understand the basic design of Ocean thermal energy plant and wave energy plant to apply the modern engineering practices.	2

Course Name: Operations	C403	Course Year:	2022-23
Research- KOE 075			

Sr. No	Course Outcomes	BL
C403.1	Develop operation research models and apply LPP Method.	5
C403.2	Apply the mathematical tools involved in transportation and assignment	
	problems.	3
C403.3	Evaluate the optimal strategy for games and optimal sequence for machines.	5
C403.4	Solve inventory control and simulation problems for practical purposes.	5
C403.5	Analysis of Queuing and project management problems.	4

Course Name: Additive	C 404	Course Year:	2022-23
Manufacturing- KME 071			

Sr. No	Course Outcomes	BL
C404.1	Understand the basics of additive manufacturing/rapid prototyping.	2
C404.2	Understand the role of additive manufacturing in the design process and the implications for design.	2
C404.3	Understand the processes used in additive manufacturing for a range of materials and applications.	2
C404.4	Apply the various software tools, processes and techniques that enable advanced/additive manufacturing and personal fabrication.	3
C404.5	Apply knowledge of additive manufacturing for real life applications.	3

Course Name: HVAC Systems-	C 405	Course Year:	2022-23
KME 072			

Sr. No	Course Outcomes	BL
C405.1	Apply the concepts in advanced refrigeration cycle and understand use of refrigerants with their respective applications and its future trends.	3
C405.2	Apply the concepts of psychrometry in various psycrometry processes and understand various air-conditioning design conditions.	3
C405.3	Understand the components and working of heat pumps, concept of ventilation and different air-conditioning systems.	2
C405.4	Apply the basic concepts to calculate the HVAC loads for different applications.	3
C405.5	Apply the concepts to air distribution systems and understand the working of various auxiliary components.	3

Course Name: Hybrid Vehicle	C406	Course Year:	2022-23
Propulsion- KAU 072			

Sr. No	Course Outcomes	BL
C406.1	Understand the basics of the hybrid electric vehicles and it's types.	2
C406.2	Understand the types of drive trains used in hybrid vehicles.	2
C406.3	Understand the propulsion units used in Hybrid Vehicles and their efficiency.	2
C406.4	Understand the requirements and devices of energy storage used in hybrid vehicles.	2
C406.5	Understand the concept of downsizing of IC engines in case of hybrid	2
	venicies.	2
C406.6	Analyze the hybrid vehicle configuration by different techniques, sizing of components and design optimization and energy management.	

Course Name: Mathematical	C407	Course Year:	2022-23
Modelling of Manufacturing			
Processes- KME 073			

Sr. No	Course Outcomes	BL
C407.1	Understand the fundamentals of manufacturing processes, mathematical models and their solutions.	2
C407.2	Understand the fundamentals of manufacturing processes, mathematical models and their solutions.	2
C407.3	Evaluate microstructure properties and residual stress of different manufacturing processes	5
C407.4	Apply the principles of casting, powder metallurgy, coating and additive manufacturing	3
C407.5	Analyze the mechanism of heat and mass transfer in welding	4

Course Name: Machine Learning-	C 408	Course Year:	2022-23
KME 074			

Sr. No	Course Outcomes	BL
C408.1	Understand the need of machine learning concepts.	2
C408.2	Understand a wide variety of ML Algorithms and how to evaluate models generated from data.	4
C408.3	Solve prediction-based problems.	5
C408.4	Analyze machine learning algorithms.	3
C408.5	Apply the Algorithms to real-world problems.	6

Course Name: Power Plant	C409	Course Year:	2022-23
Engineering- KME 076			

Sr. No	Course Outcomes	BL
C409.1	Understand different sources of power generation and their impact on	2

	environment and apply thermodynamic concepts to measure the performance of steam power plant.	
C409.2	Understand the role and working of different components of Hydro power plant and Gas power plant and gas turbine power plant and apply the concepts to measure the performance of these power plants.	2
C409.3	Understand the role and working of different components of Nuclear power plant and Solar power plants.	2
C409.4	Understand the working of various non-conventional power plants such as Geo-thermal, Wind and Tidal power plant.	2
C409.5	Understand the roles of different electrical systems & instruments and impact of power generation on environment and apply the concept of power generation economics.	2

Course Name: Vehicle Body	C410	Course Year:	2022-23
Engineering & Safety- KAU 073			

Sr. No	Course Outcomes	BL
C410.1	Understand the classification of the vehicles on the basis of body.	2
C410.2	Analyze the importance of material selection in designing automotive bodies.	4
C410.3	Apply the concepts of aerodynamics used in designing automobiles.	3
C410.4	Analyze the importance of interior and exterior ergonomics while designing the vehicle.	4
C410.5	Calculate various aerodynamic forces and moments acting on vehicle, load distribution in vehicle body and stability of vehicle.	5

Course Name: Measurement &	C411	Course Year:	2022-23
Metrology Lab- KME 751			

Sr. No	Course Outcomes	BL
C411.1	Evaluate linear and angular measurements using linear and angular measuring instruments	
C411.2	Understand the use of limits, fits and tolerance for designing purposes.	
C411.3	Apply and understand the use of various limit gauges	
C411.4	Evaluate the roundness error using dial indicator	
C411.5	Evaluate the roundness error using dial indicator	

Course Name: Mini Project or	C412	Course Year:	2022-23
Internship Assessment- KME 752			

Sr. No	Course Outcomes	BL
C412.1	Apply Technical students to the industrial environment, which cannot be simulated in the classroom and hence creating competent professionals in the industry.	3
C412.2	Understand possible opportunities to learn, understand and sharpen the real time technical /managerial skills required at the job.	2
C412.3	Apply the current technological developments relevant to the subject area of training.	3

C412.4	Apply the experience gained from the 'Industrial Internship' in discussions held in the classrooms.	3
C412.5	Create conditions conducive to quest for knowledge and its applicability on the job.	6

Course Name: Project- KME 753	C413	Course Year:	2022-23

Sr. No	Course Outcomes	BL
C413.1	Analyze and describe the problem domain.	4
C413.2	Formulate clear work plan and procedure.	6
C413.3	Analyze and discuss the results to draw valid conclusions. Describe and acquire both generic and specific skills.	4
C413.4	Create a report as per recommended format and defend the work.	6
C413.5	Evaluate the possibility of publishing papers in peer-reviewed journal/conference proceedings.	5

Course Name: Entrepreneurship	C414	Course Year:	2022-23
Development - KOE 083			

Sr. No	Course Outcomes	BL
C414.1	Understand the concepts of entrepreneurship and micro, small, medium enterprise (MSME)	2
C414.2	Understand the concepts of project identification and its features	2
C414.3	Apply the knowledge of accountancy and inventory control.	3
C414.4	Understand the concepts of project planning and control.	2
C414.5	Understand the laws concerning entrepreneur and partnership.	2

Course Name: Human Values In	C415	Course Year:	2022-23
Buddha And Jain Darshan- KOE			
098			

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Sr. No	Course Outcomes	BL
C415.1	Understand the basic concepts of Buddha and Jain Darshan.	2
C415.2	Understand the human being, the needs and activities of human being through Buddha and Jain Darshan.	2
C415.3	Understand the whole existence.	2
C415.4	Analyze the role of human being in the entire existence, thus getting clarity about values at all levels of living and human conduct.	4
C415.5	Analyze the foundation of human society and human tradition.	4

Course Name: Rural Development:	C416	Course Year:	2022-23
Administration and Planning KHU-			
801			

Sr. No	Course Outcomes	BL
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C416.1	Understand the concepts, basics and importance of rural development	2
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C416.2	Recognize and acquire knowledge of pre and post-independence rural development programs.	4
C416.3	Understand the importance, structure, significance of Panchayati raj and rural administration.	2
C416.4	Understand about the need and importance of human resource development in rural sector.	2
C416.5	Analyze the importance of rural industrialization and entrepreneurship.	4

Course Name: Project II- KME 851	C417	Course Year:	2022-23

Sr. No	Course Outcomes	BL
C417.1	Analyze and describe the problem domain.	4
C417.2	Formulate clear work plan and procedure.	6
C417.3	Analyze and discuss the results to draw valid conclusions. Describe and acquire both generic and specific skills.	4
C417.4	Create a report as per recommended format and defend the work.	6
C417.5	Evaluate the possibility of publishing papers in peer-reviewed journal/conference proceedings.	5

Program: B.Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 3rd Course Name: Fluid Mechanics Lab Course Code: KCE 353

#### **Course Outcomes**

CO No. After comp	Statement of Course Outcome letion of the course, the student will be able to	Relevant POs/ PSOs	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	Apply Bernoulli's Theorem & Momentum equation in pipe flow.	PO-1, PO-2, PO-3,PO- 5, PO-9, PO-10	Apply	Conceptual
CO2	Apply continuity equation and flow visualization in pipe flow.	PO-1, PO-2, PO-3,PO- 5, PO-9, PO-10	Apply	Conceptual
CO3	Apply the concept of buoyancy and floatation.	PO-1, PO-2, PO-3,PO- 5, PO-9, PO-10	Apply	Conceptual
CO4	Illustrate the concept of wind tunnel.	PO-1, PO-2, PO-3,PO- 5, PO-9, PO-10	Apply	Conceptual

#### CO - PO/PSO Matrix

Course Code:		Programme Outcome (PO)											PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	3	-	1	-	-	-	3	2	-	-	-	-
CO2	3	3	2	-	3	-	-	-	3	2	-	-	-	-
CO3	3	3	3	-	3	-	-	-	3	2	-	-	-	-
CO4	3	2	3	-	2	-	-		3	2	-	-	-	-
PO Target	3	2.75	2.75	-	3	-	-	-	3	2	-	-	-	-

Signature of HoD

Signature of Course Coordinator

**Department of Civil Engineering** Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: III Course Name: Fluid Mechanics, Course Code: KCE 303

**Course Outcomes** 

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive Process Level	Knowledge Category
After compl	letion of the course, the student will be able to		(BL)	(KC)
CO1	Apply the broad principles of different forces acting on a fluid	PO-1, PO-2, PO-3, PO-9, PO-12	Apply	Factual
CO2	Apply the concepts of different types of fluid flow in pipes	PO-1, PO-2, PO-3, PO-9, PO-12	Analyse	Conceptual
CO3	Apply the principles of different discharge measuring instruments in pipe flow	PO-1, PO-2, PO-3, PO-9, PO-12	Apply	Procedural
CO4	Apply the continuity, momentum and energy principles	PO-1, PO-2, PO-3, PO-4 PO-9, PO-12	Analyse	Conceptual
CO5	Apply the concepts of dimensional analysis in complex fluid flow problems	PO-1, PO-2, PO-3, PO-4 PO-9, PO-12	Apply	Conceptual

#### **CO - PO/PSO Matrix**

Course Code:		Programme Outcome (PO)										PSO	PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	1	-	-	-	-	-	1	-	-	1	-	-
CO2	3	3	1	-	-	-	-	-	1	-	-	1	-	-
CO3	3	2	1	-	-	-	-	-	1	-	-	1	-	-
CO4	3	3	2	1	-	-	-	-	1	-	-	1	-	-
CO5	3	2	2	2	-	-	-	-	1	-	-	1	-	-
PO Target	3	2.4	1.4	1.5	-	-	-	-	1	-	-	1	-	-

### **Department of Civil Engineering Program: B. Tech (Civil Engineering)**

Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 3rd Course Name: Mini Project, Course Code: KCE 354

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive Process Level	Knowledge Category
After comp	letion of the course, the student will be able to		(BL)	(KC)
CO1	Understand a system, component or process to meet desired	PO-1, PO-2, PO-3, PO-4PO-		Concentual
	progress of project.	5,PO-6,PO-7,PO-8,PO-9, PO-	Understand	Conceptual
		10,PO-11,PO-12,PSO-1,PSO-2		
CO2	Apply reasoning and logical aptitude while working in	PO-1, PO-2, PO-6, , PO-8, PO-9,		Conceptual,
	society, dealing with real life problems	PO-10,PO-11,PO-12	Apply	Procedural
CO3	Prepare Project Report for a project in Civil Engineering	PO-1, PO-2, PO-3, PO-4PO-		Conceptual,
	domain.	5,PO-6,PO-7,PO-8,PO-9, PO-	Apply	Procedural
		10,PO-11,PO-12,PSO-1		

Course Code:		Programme Outcome (PO)											PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	3	3	2	2	2	2	3	2	3	2	3	3
CO2	1	1	-	-	-	2	-	1	1	1	1	2	-	-
CO3	3	3	3	3	2	2	2	2	3	3	3	2	3	-
PO Target	2.3	2.3	3	3	2	2	2	1.6	2.3	2	2.3	2	3	3

Signature of HoD

#### **Department of Civil Engineering**

#### Program: B.Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 3rd Course Name: Surveying & Geomatics Lab Course Code: KCE 352

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive Process Level	Knowledge Category	
After compl	letion of the course, the student will be able to	PSOs	(BL)	(KC)	
CO1	Demonstrate and use various conventional surveying instruments such as chain/tape, compass, theodolite, auto-level in the field of civil engineering applications such as highway profiling, setting out curves etc.	PO-1, PO-2, PO-3,PO-5, PO- 9, PO-10	Apply	Conceptual	
CO2	Measure distances, horizontal & vertical angles and coordinates using electronic total station and GPS.	PO-1, PO-2, PO-3,PO-5, PO- 9, PO-10	Apply	Conceptual	
CO3	Apply the principles of photogrammetric surveying and take observations using mirror stereoscope and understand digitization using GIS and visual interpretation of standard FCC.	PO-1, PO-2, PO-3,PO-5, PO- 9, PO-10	Analyse	Conceptual	

#### **CO - PO/PSO Matrix**

Course Code:		Programme Outcome (PO)											PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	3	-	1	-	-	-	3	2	-	-	-	-
CO2	3	3	2	-	3	-	-	-	3	2	-	-	-	-
CO3	3	3	3	-	3	-	-	-	3	2	-	-	-	-
PO Target	3	3	2.67	-	2.33	-	-	-	3	2	-	-	-	-

Signature of Course Coordinator

#### Department of Civil Engineering Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 3rd Course Name: Surveying & Geomatics, Course Code: KCE302

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive Process Level	Knowledge Category
After comp	letion of the course, the student will be able to		(BL)	(KC)
CO1	Apply the principles of surveying to establish horizontal and vertical control.	PO-1, PO-5, PO-9, PO-10, PO- 12	Apply	Procedural
CO2	Design horizontal and vertical curves.	PO-1, PO-3, PO-5, PO-9, PO- 10, PO-12	Apply	Procedural
CO3	Demonstrate working of a total station and GPS for data collection to be used in a geographic information system.	PO-1, PO-2, PO-3, PO-4, PO- 5, PO-6, PO-7, PO-9, PO-10, PO-12	Understand	Conceptual
CO4	Apply principles of photogrammetry for surveying.	PO-1, PO-3, PO-4, PO-5, PO-6, PO-7, PO-9, PO-10, PO-12	Apply	Procedural
CO5	Apply principles of Remote Sensing and Digital Image Processing for Civil Engineering problems.	PO-1, PO-2, PO-3, PO-4, PO-5, PO-6, PO-7, PO-9, PO-10, PO- 12	Apply	Procedural

#### CO - PO/PSO Matrix

Course Code:					Progr	amme O	utcome (	PO)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	-	-	-	2	-	-	-	2	3	-	2	-	2
CO2	3	-	2	-	2	-	-	-	2	3	-	2	-	2
CO3	3	3	2	2	3	2	2	-	2	2	-	2	-	-
CO4	3	-	2	2	3	2	2	-	2	1	-	2	-	-
CO5	3	2	2	2	3	2	2	-	2	1	-	2	-	-
PO Target	3.0	2.5	2.0	2.0	2.6	2.0	2.0	-	2.0	2.0	-	2.0	-	2.0

## **Department of Civil Engineering Program: B. Tech (Civil Engineering)** Academic Session: 2022-2023 Semester: 3rd Course Name: Building Planning and Drawing Lab, Course Code: KCE 351

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive Process Level	Knowledge Category
After comp	letion of the course, the student will be able to	PSOs	(BL)	(KC)
CO1		PO-1, PO-6,		
	Apply the principles of planning and bye-laws (National building code) used	PO-7, PO-8,	Apply	Procedural
	for building planning.	PO-9, PO-10,	дрргу	Tioccuurai
		PO-12		
CO2	Prepare the plan and elevation of the buildings.	PO-1, PO-5,		
		PO-6, PO-9,	Apply	Procedural
		PO-10, PO-12		
CO3	Draft the sectional views of the buildings using AutoCAD.	PO-1, PO-5,		
		PO-6, PO-9,	Apply	Procedural
		PO-10, PO-12		

Course Code:					Progr	amme Ou	utcome (	PO)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	-	-	-	-	3	2	3	1	2	-	2	-	-
CO2	2	-	-	-	3	1	-	-	2	2	-	2	-	-
CO3	2	-	-	-	3	1	-	-	2	2	-	2	-	-
PO Target	2.33	-	-	-	3	1.67	2	3	1.67	2	-	2	-	-

Signature of HoD

# **Department of Civil Engineering** Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 3rd Course Name: Engineering Mechanics, Course Code: KCE 301

#### **Course Outcomes**

CO No.	Statement of Course Outcome		<b>Bloom's Cognitive</b>	Knowledge Category
After comp	letion of the course, the student will be able to	Relevant POs/ PSOs	Process Level (BL)	(KC)
CO1	Apply scalar and vector techniques for solving forces in statically determinate structures	PO-1, PO-2, PO-3, PO-4, PO-6, PO- 12,PSO-1	Apply	Conceptual, Procedural
CO2	Apply fundamental concepts of centre of gravity and moment of inertia for engineering problems.	PO-1, PO-2, PO-3, PO-4,PO-12,PSO-1	Apply	Factual, Conceptual, Procedural
CO3	Apply basic knowledge of equilibrium condition to calculate forces in truss	PO-1, PO-2, PO-3, PO-4,PO-6, PO- 12,PSO-1	Apply	Conceptual, Procedural
CO4	Apply basic dynamics concepts of force, momentum, work and energy in engineering problems.	PO-1, PO-2, PO-3, PO-4,PO-12,PSO-1	Apply	Factual, Conceptual, Procedural
CO5	Apply fundamental concepts of kinematics and kinetics of particles in complex problems.	PO-1, PO-2, PO-3, PO-4,PO-12,PSO-1	Apply	Factual, Conceptual, Procedural

#### **CO - PO/PSO Matrix**

Course Code:					Progr	amme O	utcome (	PO)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	1	2	-	1	-	-	-	-	-	2	2	-
CO2	3	3	2	2	-	-	-	-	-	-	-	2	2	-
CO3	3	3	2	3	-	1	-	-	-	-	-	2	2	-
CO4	3	3	2	3	-	-	-	-	-	-	-	2	2	-
CO5	3	3	2	3	-	-	-	-	-	-	-	3	2	-
PO Target	3	3	1.8	2.6	-	1	-	-	-	-	-	2.2	2	

Signature of Course Coordinator

**Department of Civil Engineering** 

Program: B.Tech (Civil Engineering) Academic Session: 2021-2022 Semester: III Course Name: MathsIII Course Code: KAS 303

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive	Knowledge Category
After completi	ion of the course, the student will be able to	PSOs	Process Level (BL)	(KC)
CO1	Apply the concept of Laplace transform to solve the differential equation	1, 2	3	Conceptual & Procedural
CO2	Apply the concept of Fourier and Z- transform to solve real life engineering problem	1,2	3	Conceptual & Procedural
CO3	Understand the concept of group, ring and logic theory	1,2	2	Conceptual & Procedural
CO4	Study the set, relation, function and apply the concept of counting technique to solve the problem	2	3	Conceptual & Procedural
CO5	Study the lattice and its properties and apply the concept of Boolean algebra to solve logic gates and K- map	1, 2, 3	3	Conceptual & Procedural

Course Code:					Progr	amme O	utcome (	PO)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	2	-	-	2	1	-	-	-	2	1		
CO2	3	3	2	-	-	2	1	-	-	-	2	1		
CO3	3	3	1	2	-	2	-	-	-	-	-	1		
CO4	2	3	1	2	-	1	-	-	-	-	1	1		
CO5	3	3	3	2	1	1	-	-	-	-	1	1		
PO Target														

Signature of Course Coordinator

Signature of HoD

## **Department of Civil Engineering Program: B. Tech (Civil Engineering)** Academic Session: 2022-2023 Semester: 4 Course Name: Technical Communication, Course Code: KAS 401

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive ProcessLevel (BL)	Knowledge Category
After compl	etion of the course, the student will be able to	PSOs		(KC)
CO1	Analyze the nature and objectives of Technical Communication relevant for workplace as Engineer.	9,10,12	Analyze	Factual & Conceptual
CO2	Utilize the Technical Writing Skills for the purpose of Technical Communication and its exposure in various dimensions.	9,10,12	Apply	Conceptual & Procedural
CO3	Imbibe presentation strategies inputs with confidence in facing diverse audience in required situations at workplace.	9,10,12	Apply	Conceptual
CO4	Estimate the application of Technical Communication to promote their competence for various media like report generation, resume design, GD, and Interview etc.	9,10,12	Evaluate	Metacognitive
CO5	Evaluate Voice dynamics and select appropriate cues for their own efficacy as fluent and efficient communicators	9,10,12	Evaluate	Metacognitive
CO - PO/PSO	O Matrix			

Course Code:					Pro	ogram Out	tcome (PC	))					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	-	-	-	-	-	-	-	2	3	-	3	-	-
CO2	-	-	-	-	-	-	-	-	2	3	-	3	-	-
CO3	-	-	-	-	-	-	-	-	2	3	-	3	-	-
CO4	-	-	-	-	-	-	-	-	2	3	-	3	-	-
CO5	-	-	-	-	-	-	-	-	2	3	-	3	-	-
PO Target	-	-	-	-	-	-	-	-	2	3	-	3	-	-

Signature of HoD

Program: B.Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 3rd Course Name: Python Programming Course Code: KNC-302

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive Process Level	Knowledge Category
After comp	letion of the course, the student will be able to		(BL)	(KC)
CO1	Understand and write simple Python programs	1,2,3,4,5, PSO 1, PSO2	С	K2
CO2	Develop Python programs with conditionals and loops.	1,2,3,4,5, PSO 1, PSO2	C,P	K4,K5
CO3	Design python functions and to use Python data structures — lists, tuples, dictionaries	1,2,3,4,5, PSO 1, PSO2	Р	K4
CO4	Perform input/output with files in Python and to apply OOPs concepts in python	1,2,3,4,5, PSO 1, PSO2	C,P	K4,K5
CO5	To apply searching, sorting and merging in Python	1,2,3,4,5, PSO 1, PSO2	С	К3

Course Code:					Prog	amme O	utcome (	PO)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	3	1	2	1	3	-	-	-	-	-	-	1	1	1
CO2	3	2	2	2	3	-	-	-	-	-	-	2	2	2
CO3	3	3	2	2	3	-	-	-	-	-	-	2	2	2
CO4	3	2	2	2	3	-	-	-	-	-	-	2	2	2
CO5	3	2	2	3	3	-	-	-	-	-	-	2	2	2

KIET Group of Institutions

PO Target	3	2	2	2	3				1.80	1.80	1.80
											t

Signature of Course Coordinator

nature of Course Coordinator

# **Department of Civil Engineering** Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 5<sup>th</sup> Course Name: Geotechnical Engineering Lab, Course Code: KCE 552

#### **Course Outcomes**

CO No.	Statement of Course Outcome		Bloom's Cognitive	
After comp	letion of the course, the student will be able to	Relevant POs/ PSOs	Process Level (BL)	Knowledge Category (KC)
CO1	Determine the index properties of soils.	PO1,PO2,PO3,PO6,PO9,PO10,PO12	APPLY	FACTUAL&CONCEPTUAL
CO2	Calculate the seepage in soil sample.	PO1,PO2,PO3,PO6,PO9,PO10,PO12	APPLY	FACTUAL&CONCEPTUAL
CO3	Determine the shear strength parameters of soil	PO1,PO2,PO3,PO6,PO9,PO10,PO12	APPLY	FACTUAL&CONCEPTUAL

#### **CO - PO/PSO Matrix**

Course Code:					Progr	amme O	utcome (	PO)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	1	-	-	1	-	-	2	3	-	2	-	-
CO2	3	3	1	-	-	1	-	-	2	3	-	2	-	-
CO3	3	3	1	-	-	1	-	-	2	3	-	2	-	-
PO Target	3	3	1	-	-	1	-	-	2	3	-	2	-	-

Signature of Course Coordinator

Signature of HoD

#### **Department of Civil Engineering**

Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 5th Course Name: Geotechnical Engineering, Course Code: KCE501

**Course Outcomes** 

CO No.	Statement of Course Outcome letion of the course, the student will be able to	Relevant POs/ PSOs	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
C01	Use the basic concepts of Index properties of soils in engineering practices.	PO1,PO2,PO4,PO6,PO10,PO12	Apply	Factual; Conceptual; Procedural
CO2	<b>Execute</b> the knowledge of soil hydraulics in geotechnical engineering.	PO1,PO2,PO4,PO6,PO10,PO12	Apply	Factual; Conceptual; Procedural
CO3	<b>Predict</b> the compaction and consolidation characteristics of soils.	PO1,PO2,PO4,PO6,PO10,PO12, PSO2	Apply	Factual; Conceptual; Procedural
CO4	Analyse the stress distributions in soils.	PO1,PO2,PO4,PO6,PO10,PO12	Analyse	Factual; Conceptual; Procedural
C05	<b>Interpret</b> the earth pressure and related slope failures.	PO1,PO2,PO4,PO6,PO10,PO12	Apply	Factual; Conceptual; Procedural

Course Code:					Prog	amme O	utcome (	PO)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	-	1	-	1	-	-	-	1	-	1	-	-
CO2	3	2	-	1	-	1	-	-	-	1	-	1	-	-
CO3	3	2	-	1	-	1	-	-	-	1	-	1	-	1
CO4	3	2	-	1	-	1	-	-	-	1	-	1	-	-
CO5	3	2	-	1	-	1	-	-	-	1	-	1	-	-
PO Target	3	2	-	1	-	1	-	-	-	1	-	1	-	0.2

#### **Department of Civil Engineering**

#### Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 5th Course Name: Mini Project, Course Code: KCE 554

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive Process Level	Knowledge Category
After compl	letion of the course, the student will be able to		(BL)	(NC)
CO1	Design a system, component or process to meet desired	PO1,PO2,PO4,PO5,PO6,PO7,	CDEATE	CONCEPTUAL&
	progress of project.	PO9,PO11,PO12,PSO1,PSO2	CKEATE	PROCEDURAL
CO2	Formulate solution to the different civil engineering projects.	PO1,PO2,PO4,PO5,PO6,PO7,	CDEATE	CONCEPTUAL&
		PO9,PO11,PO12,PSO1,PSO2	CKEATE	PROCEDURAL
CO3	Compose detailed project report for a project in civil engineering domain	PO2,PO9,PO10,PO12	CREATE	PROCEDURAL

Course Code:					Progr	amme O	utcome (	(PO)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	-	1	2	1	1	-	1	-	1	1	2	2
CO2	3	3	-	1	2	1	1	-	1	-	1	1	2	2
CO3	-	1	-	-	-	-	-	-	1	3	-	2	-	-
PO Target	3	2.33	-	1	2	1	1	-	1	3	1	1.33	2	2

Signature of HoD

#### **Department of Civil Engineering**

Program: B.Tech (Civil Engineering)

Academic Session: 2022-2023 Semester: 5th

#### Course Name: Quantity Estimation and Construction Management, Course Code: KCE-503

#### **Course Outcomes**

CO No.	Statement of Course Outcome		Bloom's Cognitive	Knowledge Category
After compl	etion of the course, the student will be able to	Relevant POs/ PSOs	Process Level (BL)	(KC)
CO1	Compute the quantities of a building materials by different	PO1,PO2,PO3, PO4,PO5,PO8,	Apply	Conceptual,
	methods.	PO9,PO10, PO11,PO12, PSO2	Арргу	Procedural
CO2	Prepare contracts and tender documents of projects.	PO2,PO4,PO8, PO9,PO10,	Amely	Factual, Conceptual,
		PO11,PO12, PSO2	Apply	Procedural
CO3	Apply network techniques in construction management.	PO1,PO2,PO4,PO5,PO8,PO9,PO10	Amely	Conceptual,
		, PO11,PO12,PSO2	Арргу	Procedural
CO4	Select the best suited construction equipments as per job	PO1,PO2,PO4,PO5,PO9,PO10,PO1	Understand	Conceptual
	requirement and site conditions.	1, PO12,PSO2		
CO5	Apply the methods of project cost management.	PO1,PO2,PO3,PO4,PO5,PO9,PO10	Apply	Conceptual,
		, PO11,PO12,PSO2		Procedural

Course Code:					Prog	ramme O	utcome (	PO)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	1	2	1	-	-	1	1	1	1	2	-	2
CO2	-	1	-	1	-	-	-	1	1	1	1	2	-	2
CO3	2	2	-	3	1	-	-	2	1	1	1	2	-	2
CO4	3	3	-	3	1	-	-	-	1	1	2	1	-	2
CO5	3	3	1	2	2	-	-	-	1	1	3	1	-	2
PO Target	2.75	2.4	1	2.2	1.25	-	-	1.33	1	1	1.6	1.6	-	2

Signature of HoD

Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: V Course Name: Quantity Estimation and Management Lab, Course Code: KCE 553

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive	Knowledge Category
After comp	letion of the course, the student will be able to		Process Level (BL)	(KC)
CO1	Compute the quantities of material for construction of Building	PO1,PO10	Apply	Conceptual,
	compute the quantities of material for construction of Bunding.		трріу	Procedural
CO2	Prepare the bill of quantities for project.	PO3,PO2,PO9,PO10,PO11,	Apply	Conceptual,
		PO12	Арргу	Procedural
CO3	Draft the tender documents for project.	PO1,PO3,PO4,PO9,PO10,	Apply	Conceptual,
		PO11,PO12	Арргу	Procedural

#### **CO - PO/PSO Matrix**

Course Code:					Progr	amme O	utcome (	PO)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	-	-	-	-	-	-	-	-	1	-	-	-	-
CO2	-	-	3	2	-	-	-	-	1	2	1	1	-	-
CO3	-	-	3	2	-	-	-	-	1	3	1	1	-	-
PO Target	3	-	3	2	-	-	-	-	1	2	1	1	-	-

Signature of HoD

Signature of Course Coordinator

**Department of Civil Engineering** Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 5<sup>th</sup> Course Name: Structural Analysis, Course Code: KCE 502

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive Process Level	Knowledge Category
After comp	letion of the course, the student will be able to		(BL)	(KC)
CO1	Identify determinacy and indeterminacy of structure.	PO1,PO2,PO3,PO4,PO12,PSO1	Analyze	Conceptual
CO2	Analyze different types of trusses for member forces.	PO1,PO2,PO3,PO4,PO12,PSO1	Analyze	Conceptual
CO3	Define strain energy and its application.	PO1,PO2,PO3,PO4,PO12,PSO1	Apply	Conceptual
CO4	Interpret Influence line diagram and its detail application.	PO1,PO2,PO3,PO4,PO12,PSO1	Apply	Conceptual
CO5	Analyze determinate arches for different loading conditions.	PO1,PO2,PO3,PO4,PO12,PSO1	Analyze	Conceptual

Course Code:				PSO	PSO									
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	2	1	-	-	-	-	-	-	-	3	3	-
CO2	3	3	2	1	-	-	-	-	-	-	-	3	2	-
CO3	3	3	3	3	-	-	-	-	-	-	-	2	2	-
CO4	3	3	3	3	-	-	-	-	-	-	-	3	3	-
CO5	3	3	1	2	-	-	-	-	-	-	-	2	1	-
PO Target	3	3	2.2	2	-	-	-	-	-	-	-	2.6	2.2	-
	•	•	•	•	•	•	•	•	•	•	•	•		0

### **Department of Civil Engineering Program: B. Tech (Civil Engineering)**

Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 5th Course Name: CAD Lab, Course Code: KCE 551

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive Process Level	Knowledge Category
After comp	letion of the course, the student will be able to	PSOs	(BL)	(KC)
CO1	Apply GIS software for geo-referencing digitizing and interpreting	PO1; PO2; PO3;		Concentual
	satelliteimages	PO4; PO5; PO9;	Apply	Procedural
	satemennages.	PO10; PO12		Tioceduiai
CO2	Apply software tools for numerical solution for the stress analysis of soil in	PO1; PO2;		
	geotechnical engineering problems	PO3; PO4; PO5;	Apply	Conceptual;
		PO9; PO10;	Аррту	Procedural
		PO12; PSO1		
CO3	Apply software tools for numerical solution for the determination of soil	PO1; PO2; PO3;		
	settlement in geotechnical engineering problems.	PO4; PO5; PO9;	Annly	Conceptual;
		PO10; PO12;	Аррту	Procedural
		PSO1		

#### CO - PO/PSO Matrix

Course Code:				PSO	PSO									
	1	1 2 3 4 5 6 7 8 9 10 11 12									1	2		
CO1	3	3	1	3	3	-	-	-	1	1	-	1	-	-
CO2	3	3	3	3	3	-	-	-	1	1	-	1	2	-
CO3	3	3	3	3	3	-	-	-	1	1	-	1	2	-
PO Target	3	3	2.33	3	3	-	-	-	1	1	-	1	2	-

Signature of Course Coordinator

Signature of HoD

### **Department of Civil Engineering Program: B. Tech (Civil Engineering)**

Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: V Course Name: Concrete Technology Course Code: KCE 051

#### **Course Outcome**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive Process Level	Knowledge Category
After compl	etion of the course, the student will be able to	PSOs	(BL)	(KC)
CO1	Characterize the properties of materials for the production of concrete.	PO1, PO2, PSO2	Apply	F, C
CO2	Apply suitable admixtures to augment the properties of concrete.	PO1, PO2, PO5, PO7, PO12, PSO2	Apply	С
CO3	Interpret the properties of fresh and hardened concrete	PO1, PO2, PSO2	Apply	. F, C
CO4	Design concrete mix proportions as per codal provisions.	PO3, PO8, PSO2	Apply	С, Р
CO5	Use advanced concrete as per field requirements.	PO1, PO <del>6</del> , PO12, PSO2	Apply	F, C

Course Code:				PSO	PSO									
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	3	-	-	-	-	-	-	-	-	-	-	-	3
CO2	3	3	-	-	3	-	2	-	-	-	-	3	-	3
CO3	-	-	3	-	-	-	-	3	-	-	-	-	-	3
CO4	3	3	-	-	-	-	-	-	-	-	-	-	-	3
CO5	3	-	-	-	-	2	3	-	-	-	-	3	-	3
PO Target	2.7	3	3	-	3	2	2.5	3	-	-	-	3	-	3

Signature of Course Coordinator

Signature of HoD

## **Department of Civil Engineering Program: B.Tech (Civil Engineering)** Academic Session: 2022-2023 Semester: 5th Course Name: Engineering Hydrology, Course Code: KCE-055

**Course Outcomes** 

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive Process Level	Knowledge Category
After compl	etion of the course, the student will be able to		(BL)	(KC)
CO1	Understand the basic concept of hydrological cycle and its various phases.	PO-1, PO-2	Understand	Factual
CO2	Understand the concept of runoff and apply the knowledge to construct the hydrograph.	PO-1, PO-2, PO-3,PO-4, PO-10, PO-12	Analyse	Conceptual
CO3	Apply the various methods to assess the flood.	PO-1, PO-2, PO-3,PO-4, PO-6, PO-10, PO-12	Create	Conceptual
CO4	Assess the quality of various forms of water and their aquifer properties.	PO-1, PO-2, PO-3,PO-4, PO-6, PO-10	Analyse	Conceptual
CO5	Understand the well hydraulics and apply ground water modelling techniques.	PO-1, PO-2, PO-3,PO-4, PO-5, PO-6 PO-7, PO-8, PO-9,PO-10, PO-12, PSO-2	Create	Conceptual

Course Code:				PSO	PSO									
	1	1 2 3 4 5 6 7 8 9 10 11 12											1	2
CO1	3	1	-	-	-	-	-	-	-	-	-	-	-	-
CO2	3	3	3	2	-	-	-	-	-	1	-	2	-	-
CO3	3	3	3	3	-	3	-	-	-	2	-	2	-	-
CO4	3	2	2	2	-	2	-	-	-	2	-	-	-	-
CO5	3	3	3	3	3	2	3	2	1	3	-	2	-	2
PO Target	3	2.4	2.75	2.5	3	2.3	3	2	1	2	-	2	-	2

#### **Department of Civil Engineering**

Program: B.Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: V Course Name: (ITCS), Course Code: KNC-502

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive	Knowledge Category
After compl	etion of the course, the student will be able to	PSOs	Process Level (BL)	(KC)
CO1	Apply the basic principles of thought process and reasoning to identify the roots and details of some of the contemporary issues faced by our nation	8,9,10,11,12	Apply	Factual
CO2	Illustrate the importance of scripts and languages in India	8,9,10,12	Understand, Apply	Factual
CO3	Understanding of different religions of India & socio religious reform movement of 19 <sup>th</sup> century	8,10,11,12	Understand	Factual
CO4	Application of Yogic-science and wisdom capsules in Sanskrit literature that are important in modern society	8,10,12	Apply	Factual
CO5	Understand the importance of Indian Architect, Engineering and Architecture in Ancient India	8,9,10,11,12	Understand	Factual

Course Code:					Progr	amme O	utcome (	PO)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	-	-	-	-	-	-	1	1	1	1	2	-	-
CO2	-	-	-	-	-	-	-	1	1	1	-	2	-	-
CO3	-	-	-	-	-	-	-	1	-	1	1	3	-	-
CO4	-	-	-	-	-	-	-	1	-	1	-	2	-	-
CO5	-	-	-	-	-	-	-	1	1	1	2	3	-	-
PO Target	-	-	-	-	-	-	-	1	1	1	1.33	2.4	-	-

#### Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 7th Course Name: Irrigation and Water Resources Engineering, Course Code: KCE079

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive	Knowledge Category
After compl	etion of the course, the student will be able to		Process Level (DL)	(KC)
CO1	Describe the components of hydrological cycle, evaporation process and consumptive use	PO-1, PO-2, PO-3, PO-4, PO-7	Understand	Factual, Conceptual
CO2	Apply the knowledge of stream flow measurement techniques and hydrograph theory for computation of run off.	PO-1, PO-2, PO-3, PO-4, PO-7, PO- 9,PO-12	Apply	Factual, Conceptual, Procedural
CO3	Design different types of irrigation channels and water logging preventive measures	PO-1, PO-2, PO-3, PO-4, PO-7, PO- 9,PO-11,PO-12,PSO-1,PSO-2	Create	Conceptual, Procedural
CO4	Design the regulatory and control systems of canal and irrigation outlets	PO-1, PO-2, PO-3, PO-4, PO-7, PO- 9, PO-12, PSO-1, PSO-2	Create	Conceptual, Procedural
CO5	Apply the knowledge of ground water hydrology and determination of discharge through wells	PO-1, PO-2, PO-3, PO-4, PO-5,PO- 6, PO-7, PO-9,PO-12	Apply	Factual, Conceptual, Procedural

Course Code:				PSO	PSO									
	1	2 3 4 5 6 7 8 9 10 11 12										12	1	2
CO1	2	2	2	1	-	-	1	-	-	-	-	-	-	-
CO2	3	2	1	2	-	-	1	-	1	-	-	1	-	-
CO3	3	3	3	2	-	-	2	-	1	-	1	1	1	1
CO4	3	3	2	2	-	-	2	-	1	-	1	-	1	1
CO5	3	1	1	1	1	1	1	-	1	-	-	1	-	-
PO Target	2.8	2.2	1.8	1.6	1	1	1.4	-	1	-	1	1.5	1.5	1

Signature of HoD

#### **Department of Civil Engineering** Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 7th Course Name: Mini Project, Course Code: KCE 752

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive Process Level	Knowledge Category
After comp	letion of the course, the student will be able to		(BL)	(KC)
CO1	Design a system, component or process to meet desired progress of project	PO1; PO2; PO4; PO5; PO6; PO7; PO9; PO11; PO12; PSO1; PSO2	Create	Factual; Conceptual; Procedural
CO2	Formulate solution to the different civil engineering projects.	PO1; PO2; PO4; PO5; PO6; PO7; PO9; PO11; PO12; PSO1; PSO2	Create	Factual; Conceptual; Procedural
CO3	Compose detailed project report for a project in civil engineering domain.	PO1; PO9; PO10; PO12	Create	Factual; Conceptual; Procedural

Course Code:				PSO	PSO									
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	-	1	2	1	1	-	1	-	1	1	2	2
CO2	3	3	-	1	2	1	1	-	1	-	1	1	2	2
CO3	-	1	-	-	-	-	-	-	1	3	-	2	-	-
PO Target	3	2.33	-	1	2	1	1	-	1	3	1	1.33	2	2

Signature of HoD

Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: VII Course Name: Railway, Waterway and Airway Engineering, Course Code: KCE070

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive Process Level	Knowledge Category
After compl	etion of the course, the student will be able to	PSOs	(BL)	(KC)
CO1	Understand the components of railway infrastructure	PO1, PO2, PO10, PO12	Understand	Factual, Conceptual
CO2	Illustrate the factors governing design of railway infrastructures	PO1, PO2, PO10, PO12, PSO1	Apply	Factual, Conceptual, Procedural
CO3	Understand various components of railway track system	PO1, PO2, PO10, PO12	Understand	Conceptual, Procedural
CO4	Apply the concepts of airport geometrics in airport engineering	PO1, PO2, PO10, PO12, PSO1	Apply	Factual, Conceptual, Procedural
CO5	Understand the various concepts of water transport system.	PO1,PO2, PO10, PO12	Understand	Conceptual

Course Code:				PSO	PSO									
	1	2 3 4 5 6 7 8 9 10 11 12											1	2
CO1	1	1	-	-	-	-	-	-	-	1	-	1	-	-
CO2	3	1	-	-	-	-	-	-	-	2	-	1	1	-
CO3	1	1	-	-	-	-	-	-	-	1	-	1	-	-
CO4	3	2	-	-	-	-	-	-	-	2	-	1	1	-
CO5	1	1	-	-	-	-	-	-	-	1	-	1	-	-
PO Target	1.8	1.2	-	-	-	-	-	-	-	1.4	-	1	1	_

### **Department of Civil Engineering**

Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 7 Course Name: Renewable Energy Resources, Course Code: KOE074

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive Process Level	Knowledge Category
After comple	tion of the course, the student will be able to	PSOs	(BL)	(KC)
CO1	Identify various non-conventional energy resources and their applications	2	Remember	Conceptual
CO2	Interpret various methods of solar energy applications	2,6	Understand	Conceptual & Procedural
CO3	Apply concept of geothermal conversion processes, magnate hydrodynamics and fuel cells	2,6	Apply	Conceptual & Procedural
CO4	Apply concept of wind energy conversion and thermionic conversions	2,6	Apply	Conceptual & Procedural
CO5	Explain the conversion methodology and biomass and ocean energy.	2,6	Understand	Conceptual & Procedural

Course Code:				PSO	PSO									
	1	1 2 3 4 5 6 7 8 9 10 11 12											1	2
CO1	3	1	-	-	-	-	-	-	-	-	-	2	-	-
CO2	3	1	2	-	2	2	2	-	-	-	-	2	-	-
CO3	3	1	2	2	2	2	2	-	2	1	1	2	-	-
CO4	3	1	2	2	2	2	2	-	2	1	1	2	-	-
CO5	3	1	2	2	2	2	2	-	-	-	-	2	-	-
PO Target	3	1	1.6	1.2	1.6	1.6	1.6	-	0.8	0.4	0.4	2	-	-

Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: VII

#### Course Name: Rural Development Administration and Planning, Course Code: KHU701

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive Process Level	Knowledge Category
After comp	letion of the course, the student will be able to	PSOs	(BL)	(KC)
CO1	Understand the definitions, concepts and components of Rural Development.	PO-1, PO-2, PO-3, PO-4,	Understand	Conceptual
		PO-6, PO- 12,PSO-1		
CO2	Describe the importance, structure, significance, resources of Indian rural economy	PO-1, PO-2, PO-3, PO-4,PO- 12,PSO-1	Understand	Conceptual
CO3	Understand about the area development programs and its impact	PO-1, PO-2, PO-3, PO-4,PO- 6, PO-12,PSO-1	Understand	Conceptual
CO4	Apply the concepts of Rural Development in rural entrepreneurship	PO-1, PO-2, PO-3, PO-4,PO- 12,PSO-1	Apply	Conceptual
CO5	Understand about the using of different methods for human resource planning.	PO-1, PO-2, PO-3, PO-4,PO- 12,PSO-1	Understand	Conceptual

#### **CO - PO/PSO Matrix**

Course Code:		Program Outcome (PO)													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO1	2	2	1	2	-	1	-	-	-	-	-	2	2	-	
CO2	2	2	2	2	-	1	-	-	-	-	-	2	2	-	
CO3	2	2	2	2	-	1	-	-	-	-	-	2	2	-	
CO4	2	2	2	2	-	1	-	-	-	-	-	2	2	-	
CO5	2	2	2	2	-	1	-	-	-	-	-	2	2	-	
PO Target	2	2	1.8	2	-	1	-	-	-	-	-	2	2	D	

#### **Department of Civil Engineering**

#### Program: B.Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: \_VII Course Name: Solid Waste Management, Course Code: KCE 075

**Course Outcomes** 

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive Process Level	Knowledge Category
After comp	letion of the course, the student will be able to		(BL)	(KC)
CO1	A dant the concent of solid waste management	PO6,PO7,PO8,	Apply	Conceptual,
	Adapt the concept of solid waste management.		Арргу	Procedural
CO2	Apply the various handling & processing methods for solid	PO1,PO6,PO7,PO8,PO12	Apply	Procedural
	waste management.			
CO3	Apply the concept of land filling for disposal of solid waste.	PO2,PO3,PO4,PO6,PO7,PO	Apply	Procedural
		8,PO9,PO10,PO12	rppiy	Tiocedurar
CO4	Design composting and other solid waste conversion units	PO1,PO2,PO3,PO4,PO6,PO	Apply	Procedural
		7,PO8,PO9,PO10,PO12		
CO5	Understand the various hazardous waste, risk assessment and	PO6,PO7, PO8,PO12	Understand	Conceptual, Factual
	legislation.			

#### **CO - PO/PSO Matrix**

Course Code:				PSO	PSO									
	1	2	12	1	2									
CO1	-	-	-	-	-	3	3	2	-	-	-	-	-	-
CO2	1	-	-	-	-	3	3	2	-	-	-	2	-	-
CO3	-	2	2	1	-	3	3	2	1	2	-	1	-	-
CO4	2	2	2	1	-	3	3	2	1	2	-	2	-	-
CO5	-	-	-	-	-	3	3	2	-	-	-	2	-	-
PO Target	1.5	2	2	1		3	3	2	1	2		1.8		

### **Department of Civil Engineering**

#### Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 7<sup>th</sup> Course Name: Concrete Lab, Course Code: KCE751

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive Process Level	Knowledge Category
After comp	letion of the course, the student will be able to		(BL)	(KC)
CO1	Conduct Quality Control tests on concrete making materials.	PO1,PO2,PSO2	Apply	Procedural
CO2	Conduct Quality Control tests on fresh & hardened concrete.	PO1,PO2,PSO2	Apply	Procedural
CO3	Design and test concrete mix.	PO1,PO2,PO3, PO4,PSO2	Create	Procedural

Course Code:		Programme Outcome (PO)											PSO	PSO
KCE751	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	-	-	-	-	-	-	-	-	-	-	-	2
CO2	3	2	-	-	-	-	-	-	-	-	-	-	-	2
CO3	3	2	3	2	-	-	-	-	-	-	-	-	-	3
PO Target	3	2	3	2	-	-	-	-	-	-	-	-	-	2.33

Signature of HoD

#### **Department of Civil Engineering**

#### Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: VII Course Name: Design of Steel Structures, Course Code: KCE076

**Course Outcomes** 

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive Process Level	Knowledge Category
After comp	letion of the course, the student will be able to		(BL)	(KC)
CO1	Understand properties of steel and types of loads acting on steel structures.	PO1	Understand	Conceptual, Factual
CO2	Apply the basic concept to design welded and bolted type of simple connections for steel structures.	PO1,PO3,PO4,PO9,PO12,PS O1,PSO2	Apply	Procedural
CO3	Apply the basic concept to design tension member for simple steel structures.	PO1,PO3,PO4,PO9,PO12,PS O1,PSO2	Apply	Procedural
CO4	Apply the basic concept to design compression members for simple steel structures.	PO1,PO3,PO4,PO9,PO12,PS O1,PSO2	Apply	Procedural
CO5	Apply the basic concept to design flexural members.	PO1,PO3,PO4,PO9,PO12,PS O1,PSO2	Apply	Procedural

Course Code:				PSO	PSO									
	1	1 2 3 4 5 6 7 8 9 10 11 12											1	2
CO1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	3	-	3	2	-	-	-	-	1	-	-	1	2	2
CO3	3	-	3	2	-	-	-	-	1	-	-	1	2	2
CO4	3	-	3	2	-	-	-	-	1	-	-	1	2	2
CO5	3	-	3	2	-	-	-	-	1	-	-	1	2	2
PO Target	2.6	-	3	2	-	-	-	-	1	-	-	1	2	2

Department of Civil Engineering Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: VII Course Name: Project Course Code: KCE 753

#### **Course Outcome**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive Process Level	Knowledge Category
After comp	letion of the course, the student will be able to	PSUs	( <b>BL</b> )	(KC)
CO1		PO1, PO2, PO3,		
	Work affectively as an individual and member of the team to solve complex	PO4,PO5,PO6,	, Apply	
	engineering problems	PO7,PO8,PO9,		F,C,P
	engineering problems.	PO10, PO11,		
		PO12, PSO1		
CO2		PO1, PO2, PO3,		
	Apply engineering knowledge to solve real life problems and involve in	PO4,PO5,PO6,		~ -
	self-learning process	PO7,PO8,PO9,	Apply	C,P
	ben rearring process.	PO10, PO11,		
		PO12, PSO1		
CO3		PO1, PO2, PO3,		
		PO4,PO5,PO6,	A	ЕСР
	Apply research based knowledge and methods to arrive at valid conclusions.	PO7,PO8,PO9,	Арріу	F,C,P
		PO10, PO11,		
<u> </u>		PO12, PS01		
C04	Apply modern tools for analysis and design of complex engineering	PO1, PO2, PO3, PO4 PO5 PO6		
	noplame	PO7 PO11	Apply	С, Р
	problems.	PO12 PS01		
C05		PO1. PO2. PO3.		
005		PO4.PO5.PO6.		
	Develop ethical solutions of engineering problems taking into account its	PO7.PO8.PO9.	Create	С. Р
	impact on society, environment and sustainability.	PO10, PO11,		
		PO12, PSO1		
CO 6		PO1, PO2, PO3,		
	Compose and present detailed project report of his/her work and defend	PO4,PO5,PO6,		
	offootively	PO7,PO8,PO9,	Apply	Р
		PO10, PO11,		
		PO12, PSO1		

**CO - PO/PSO Matrix** 

nature of Course Coordinator

natur	e of Course Coordi	nator	Or Programme Outcome (PO)													
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	
	CO1	3	3	3	3	2	2	2	3	3	2	2	2	1	-	
	CO2	3	3	3	2	2	2	2	2	2	2	1	2	3	-	
	CO3	3	3	3	3	3	1	2	-	-	-	1	2	3	-	
	CO4	3	3	3	3	3	2	2	2	2	2	1	3	3	-	
	CO5	3	3	3	2	2	2	3	3	2	2	1	2	2	-	
	CO6	2	2	2	1	1	1	1	3	2	3	3	1	1	-	
	PO Target	2.8	2.8	2.8	2.3	2.1	1.6	2.0	2.6	2.2	2.2	1.5	2.0	2.1	-	

Signature of HoD

Signature of Course Coordinator

#### Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: IV Course Name: Hydraulic Engineering & Machines Course Code: KCE 403

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's	Knowledge
After comp	letion of the course, the student will be able to	PSOs	Level (BL)	(KC)
CO1	Apply their knowledge of fluid mechanics in addressing problems in open channels.	PO1, PO2, PO3, PO4, PO9, PO12	Apply	Factual, Conceptual, Procedural
CO2	Apply knowledge in solving problems of uniform, gradually and rapidly varied flows in steady state conditions.	PO1, PO2, PO3, PO4, PO9, PO12	Apply	Factual, Conceptual, Procedural
CO3	Apply knowledge in hydraulic machineries like pumps and turbines.	PO1, PO2, PO3, PO4, PO9, PO12, PO5	Apply	Factual, Conceptual, Procedural
CO4	Apply the concepts of impulse momentum equation in solving problems of impact of jet	PO1, PO2, PO3, PO4, PO9, PO12	Apply	Factual, Conceptual, Procedural
CO5	Apply the knowledge of different parts of turbine in solving complex problems	PO1, PO2, PO3, PO4, PO9, PO12	Apply	Factual, Conceptual, Procedural

Course Code:		Program Outcome (PO)													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
C01	3	2	2	2	-	-	-	-	1	-	-	2	-	-	
CO2	3	3	3	3	-	-	-	-	1	-	-	2	-	-	
CO3	3	3	2	2	1	-	-	-	1	-	1	2	-	-	
CO4	3	2	2	2	-	-	-	-	1	-	-	1	-	-	
CO5	3	2	1	2	-	-	-	-	1	-	-	1	-	-	
PO Target	3	2.4	2	2.2	1	-	-	-	1	-	1	0.8	-	-	



#### Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 4th Course Name: Introduction to Solid Mechanics, Course Code: KCE 402

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/PSOs	Bloom's Cognitive ProcessLevel (BL)	Knowledge Category (KC)
After compl	etion of the course, the student will be able to			
CO1	Apply the concepts and principles of stresses and strains.	PO 1,PO2, PO-3, PO-4, PO-6, PO- 11,PO12,PSO-1, PSO -2	Apply	Factual, Conceptual, Procedural
CO2	Apply the concept of Shear Force and Bending Moment to solve solid mechanics problems	PO-1, PO-2, PO-3, PO-4, PO-11, PO12,PSO-1,PSO-2	Apply	Factual, Conceptual, Procedural
CO3	Apply the principle of flexural stress, shear stress and torsion on structural members subjected to combined stresses.	PO-1, PO-2, PO-3, PO-4, PO-11, PO12,PSO-1,PSO-2	Apply	Factual, Conceptual, Procedural
CO4	Apply the moment area method and Macaulay's method to calculate the deflections at any point on a beam subjected to a combination of loads	PO-1, PO-2, PO-3, PO-4, PO-6, PO12,PSO-1	Apply	Factual, Conceptual, Procedural
CO5	Apply the Rankine theory and lame's theory to solve the problems of columns, springs and cylinders against loads	PO-1, PO-2, PO-3, PO-4, PO-6, PO-11, PO12,PSO-1,PSO-2	Apply	Factual, Conceptual, Procedural

Course Code:	Program Outcome (PO)													PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	2	3	2	1	-	1	-	-	-	-	1	2	2	2
CO2	3	3	2	2	-	-	-	-	-	-	1	2	2	2
CO3	3	3	3	2	-	-	-	-	-	-	1	2	2	2
CO4	2	3	2	3	-	1	-	-	-	-	1	1	2	2
CO5	2	2	2	3	-	1	-	-	-	-	1	2	2	2
PO Target	2.4	2.8	2.2	2.2		1					1	1.8	1.8	2

**Signature of HoD** 

**Program: B. Tech (Civil Engineering)** 

Academic Session: 2022- 2023 Semester: 4th

Course Name: Universal Human Values and Professional Ethics Course Code: KVE401

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive Process	Knowledge Category (KC)
After comp	letion of the course, the students will be able to		Level (BL)	()
CO1	Understand the key points about value education and its role in harmony at various levels.	PO6, PO8, PO9, PO10, PO12	Understand	Factual; Conceptual, Procedural
CO2	Understand harmony in the self and body.	PO6, PO8, PO9, PO10, PO12	Understand	Factual; Conceptual, Procedural
CO3	Understand role of naturally acceptable feelings in ensuring harmonious human to human relationship in family and society.	PO6, PO8, PO9, PO10, PO12	Understand	Factual; Conceptual, Procedural
CO4	Understand nature, existence and whole - existence as co-existence for holistic perception of harmony.	PO6, PO7, PO8, PO9, PO10, PO12	Understand	Factual; Conceptual; Procedural
CO5	Apply holistic understanding of harmony on professional ethics.	PO6, PO7, PO8, PO9, PO10, PO12	Apply	Factual; Conceptual; Procedural

#### CO - PO/PSO Matrix

Course Code:		Programme Outcome (PO)												
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	-	-	-	-	2	-	2	2	2	-	2	-	-
CO2	-	-	-	-	-	2	-	2	3	2	-	2	-	-
CO3	-	-	-	-	-	3	-	2	3	2	-	2	-	-
CO4	-	-	-	-	-	3	3	2	3	2	-	2	-	-
CO5	-	-	-	-	-	3	2	3	2	3	-	2	-	-
PO Target	-	-	-	-	-	2.6	2.5	2.2	2.6	2.2	-	2	-	-

Signature of HoD

Signature of Course Coordinator
# Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: IV

#### **Course Name: Material Testing and Construction Practices, Course Code: KCE401**

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's	Knowledge
After comp	letion of the course, the student will be able to	PSOs	Level (BL)	(KC)
CO1	Identify various building materials and to understand their basic properties.	PO1, PO2, PSO2	Analyze	F, C, P
CO2	Understand the use of non-conventional civil engineering materials.	PO1, PO2, PO5, PO7, PO12, PSO2	Apply	С
CO3	Study suitable type of flooring and roofing in the construction process.	PO1, PO2, PSO2	Apply	Р
CO4	Characterize the concept of plastering, pointing and various other building services.	PO1, PO2, PSO2	Apply	С, Р
CO5	Exemplify the various fire protection, sound and thermal insulation techniques, maintenance and repair of buildings.	PO1, PO6, PO12, PSO2	Apply	С

#### **CO - PO/PSO Matrix**

Course Code:					Prog	gram Out	tcome (P	0)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	3	-	-	2	-	-	-	-	1	-	-	1	-	-
CO2	3	-	-	2	-	2	2	-	1	-	-	1	-	-
CO3	3	-	-	2	-	2	2	2	1	-	-	2	-	-
CO4	3	-	-	2	2	2	2	2	1	-	-	2	-	-
CO5	3	-	-	2	3	2	2	2	1	-	-	2	-	2
PO Target	3	-	-	2	2.5	2	2	2	1	-	-	1.6	-	2

Signature of HoD

#### Program: B. Tech (Civil Engineering) Academic Session:2022-2023 Semester: IV Course Name: Computer System Security, Course Code:KNC301

#### CourseOutcomes

CONo.	StatementofCourseOutcome	Relevant	Bloom'sCognitive	Knowledge
After comp	letion of the course, the student will be able to	POs/PSO s	ProcessLevel(BL)	KC)
CO1	Interpret software bugs that pose cyber security threats and their mitigation techniques	PO1, PO2 & PO6	2	Conceptual
CO2	Explain confidentiality policies and confinement techniques to secure the system.	PO1, PO5 & PO6	2	Conceptual & Procedural
CO3	Demonstrate cyber-attack scenarios to web browsers and web servers and their mitigation techniques.	PO1, PO2 & PO6	2	Conceptual & Procedural
CO4	Apply cryptography techniques and different protocols for secure transfer of data over the network	PO2, PO3 & PO6	3	Conceptual & Procedural
CO5	Illustrate Internet Security Problems and Protocols used for secure transaction.	PO1, PO2 & PO6	2	Conceptual & Procedural

#### **CO-PO/PSO Matrix**

Course Code:					Pro	gram Ou	tcome(P	D)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1	2	-	-	-	3	-	-	-	-	-	-	1	-
CO2	2	-	-	-	2	1	-	-	-	-	-	-	2	-
CO3	2	2	-	-	-	1	-	-	-	-	-	-	2	-
CO4	-	2	3	-	-	1	-	-	-	-	-	-	-	3
CO5	2	1	-	-	-	2	-	-	-	-	-	-	2	-
PO Target													ρ	

**Signature of HoD** 

#### **Department of Civil Engineering Program: B. Tech (Civil Engineering)**

#### Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 4 Course Name: Energy Science and Engineering, Course Code: KOE043

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive Process Level	Knowledge Category
After comple	tion of the course, the student will be able to	1005	( <b>BL</b> )	(110)
CO1	Identify and understand about energy usage and conversion	2	Remember	Conceptual
CO2	Understand the concepts of nuclear energy	2,6	Understand	Conceptual & Procedural
CO3	Understand and Apply the concepts of solar energy	2,6	Understand, Apply	Conceptual & Procedural
CO4	Identify the difference between conventional and nonconventional energy sources among all other energy resources.	2,6	Understand	Conceptual & Procedural
CO5	Understand and apply the concepts of energy audit for optimization of energy consumption	2,6	Understand, Apply	Conceptual & Procedural

#### CO - PO/PSO Matrix

Course Code:				PSO	PSO									
	1	1 2 3 4 5 6 7 8 9 10 11 12											1	2
CO1	3	1	-	-	-	-	-	-	-	-	-	2	-	-
CO2	3	1	2	-	2	2	2	-	-	-	-	2	-	-
CO3	3	1	2	2	2	2	2	-	2	1	1	2	-	-
CO4	3	1	2	2	2	2	2	-	2	1	1	2	-	-
CO5	3	1	2	2	2	2	2	-	-	-	-	2	-	-
PO Target	3	1	1.6	1.2	1.6	1.6	1.6	-	0.8	0.4	0.4	2	-	-

**Signature of HoD** 

#### Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 1V Course Name: Material Testing Lab, Course Code: KCE 451

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive ProcessLevel (BL)	Knowledg eCategory (KC)
CO1	Determine the quality of bricks, cement, fine aggregate and coarse aggregate and its suitability for construction purpose.	PO-1, PO- 2, PO-5, PO-8, PO- 9, PO-10, PO-12, PSO-1	Apply	Conceptual, Procedural
CO2	Design the mix, make the specimens and test the same for the strength for comparison with design strength.	PO-1, PO-2, PO-5, PO-8, PO-9, PO- 10, PO-12, PSO-1	Apply	Conceptual, Procedural
CO3	Develop ability to function as a member of a team to complete the assigned task	PO-1, PO-9, PO- 10, PO-12	Understand	Conceptual

#### CO - PO/PSO Matrix

Course Code:					Pro	gram Out	come (PC	))					PSO	PSO
	1	1 2 3 4 5 6 7 8 9 10 11 12											1	2
CO1	3	1	-	1	1	1	1	-	1	1	1	2	-	2
CO2	3	2	2	2	2	1	1	-	1	1	1	2	-	2
CO3	-	-	-	-	-	-	-	-	3	1	-	1	-	2
PO Target	3	1.5	2	1.5	1.5	1.0	1.0	-	1.7	1.0	1.0	1.7	-	2.0

Signature of HoD

#### Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 1V Course Name: Solid Mechanics Lab, Course Code: KCE 452

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive	Knowledg eCategory	
After comple	tion of the course, the student will be able to	PSOs	ProcessLevel (BL)	(KC)	
		PO-1, PO-			
		2, PO-3,			
	Verify the deflection in different structural members by using apparatus	PO-4, PO-	Apply	Conceptual,	
CO1	verify the deficetion in different su detatal memoers by using apparatus	6, PO-9,	Арргу	Procedural	
		PO-10, PO-			
		12,PSO-1			
		PO-1, PO-2, PO-3,			
$CO^2$	Verify the deflection in different structural members by using apparatus	PO-4, PO-5, PO-6,	Apply		
	verify the deficetion in different su detural memoers by using apparatus	PO-9, PO-10, PO-	Арргу	Conceptual, Procedural	
		12,PSO-1			
		PO-1, PO-2, PO-3,			
CO3	Explain the behaviour of beams and columns under different end conditions	PO-4, PO-6, PO-9,	Understand		
	Explain the behaviour of beams and columns under different end conditions.	PO-10, PO-	Chaerstand	Conceptual	
		12,PSO-1			

#### CO - PO/PSO Matrix

Course Code:					Pro	ogram Out	come (PC	))					PSO	PSO
	1	1 2 3 4 5 6 7 8 9 10 11 12											1	2
CO1	3	2	2	2	-	1	-	-	1	1	-	2	2	-
CO2	3	2	2	2	2	1	-	-	1	1	-	2	2	-
CO3	3	2	2	2	-	1	-	-	1	1	-	2	2	-
PO Target	3	2	2	2	2	1	-	-	1	1	-	2	2	_

**Signature of HoD** 

#### Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: IV Course Name: Hydraulics & Hydraulic Machines Lab, Course Code: KCE 453

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive	Knowledge Category (KC)
After comple	tion of the course, the student will be able to	PSOs	(BL)	
		PO-1, PO-		
		2, PO-3,	Apply	Concentual Procedural
CO1	Apply the knowledge of open channel flow to understand flow characteristics	PO-9, PO-	Арргу	Conceptual, Procedural
		10, P0-12		
		PO-1, PO-2, PO-		
CO2	Evaluate the performance test of different turbines for various head, speed and load.	3, PO-9, PO-10,	Analyze	Conceptual, Procedural
		P0-12		
		PO-1, PO-2, PO-		
CO3	Evaluate the performance test on pumps and plotting of operating characteristics	3, PO-9, PO-10,	Analyze	Conceptual, Procedural
		P0-12		,

#### CO - PO/PSO Matrix

Course Code:				PSO	PSO									
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	1	1	-	-	-	-	-	1	1	-	1	-	-
CO2	_								_				-	-
	3	2	1	-	-	-	-	-	1	1	-	1		
CO3	3	2	1	-	-	-	-	-	1	1	-	1	-	-
PO Target	3	1.66	1	-	-	-	-	-	1	1	-	1	-0	-



# **Department of Civil Engineering** Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 6<sup>th</sup>

Course Name: Constitution of India, Law & Engineering, Course Code: KNC 601

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/PSOs	Bloom's Cognitive Process	Knowledge Category
After comp	letion of the course, the student will be able to		Level (BL)	(KC)
CO1	Identify and explore the basic features and modalities about the Indian constitution.	PO6, PO7	Understand	Factual /Conceptual
CO2	Differentiate and relate the functioning of Indian parliamentary system at the center and state level	PO6, PO7	Analyze	Factual/ Procedural
CO3	Differentiate different aspects of the Indian Legal System and its related bodies.	PO6, PO7, PO8	Understand	Factual /Conceptual
CO4	Discover and apply different laws and regulations related to engineering practices.	PO6, PO7, PO8, PO10	Understand	Factual /Conceptual
CO5	Correlate role of engineers with different organizations and governance model	PO6, PO7, PO8, PO9, PO10, PO11, PO12	Understand	Factual /Conceptual

Course Code:					Pro	gram Out	come (P	0)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	-	-	-	-	3	2	-	-	-	-	-	-	-
CO2	-	-	-	-	-	3	2	-	-	-	-	-	-	-
CO3	-	-	-	-	-	3	2	1	-	-	-	-	-	-
CO4	-	-	-	-	-	3	2	2	-	2	-	-	-	-
CO5	-	-	-	-	-	2	2	2	2	2	2	2	-	-
PO Target	-	-	-	-	-	2.80	2	1.67	2	2	2	2	- <sub>A</sub>	-

**Signature of HoD** 

**KIETGroupofInstitutions** 

#### **Department of Civil Engineering**

**Program: B. Tech (Civil Engineering)** 

AcademicSession:2022-2023

Semester: VI Course Name: Design of Concrete Structures, Course Code: KCE601

#### CourseOutcomes

CONo.	StatementofCours eOutcome	Relevant POs/PSOs	Bloom'sCognitive ProcessLevel(BL)	Knowledge Category(	
Aftercompl	etionofthe course, the student will be able to			KC)	
CO1	Analyze and Design RCC beams for flexure by IS methods.	PO1,PO2,PO3,PO4/P SO1	Analyze	Conceptual, Procedural	
CO2	Analyze and Design RCC beams for shear by IS methods.	PO1,PO2,PO3,PO4/PSO1	Analyze	Conceptual, Procedural	
CO3	Analyze and Design RCC slabs and stair case by IS methods.	PO1,PO2,PO3,PO4/PSO1	Analyze	Conceptual, Procedural	
CO4	Design the RCC compression members by IS methods.	PO1,PO2,PO3,PO4/PSO1	Analyze	Conceptual, Procedural	
CO5	Design various types of footings and cantilever retaining wall.	PO1,PO2,PO3,PO4/PSO1	Analyze	Conceptual, Procedural	

#### **CO-PO/PSOMatrix**

CourseCode:				PSO	PSO									
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	3	2	2	1	-	2	1	1	-	2	2	-
CO2	3	3	3	2	2	1	-	2	1	1	-	2	2	-
CO3	3	3	3	2	2	1	-	2	1	1	-	2	2	-
CO4	3	3	3	2	2	1	-	2	1	1	-	3	2	-
CO5	3	3	3	2	2	1	-	2	1	1	-	2	2	-
POTarget													Δ	
													A.	

**Signatureof HoD** 

# **Department of Civil Engineering** Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: VI Course Name: Environmental Engineering, Course Code: KCE 603

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Delevent DOs/DSOs	Bloom's Cognitive	Knowledge Category
After compl	letion of the course, the student will be able to	Relevant POS/ PSOS	(BL)	(KC)
CO1	Interpret the water demand and major components for	PO-1, PO-2, PO-4, PO-7, PO-8,	Apply	Conceptual &
	transmission of water.	PO-11	11.5	Procedural
CO2	Apply the concepts of storage & distribution of water.	PO-1, PO-6, PO-7,	Apply	Factual
CO3	Assess the physical, chemical & biological parameters of	PO-1, PO-2, PO3, PO4, PO5,		
	water.	PO-6, PO7, PO-8, PO-9, PO-10,	Apply	Factual & Conceptual
		PO-11, PO-12,		
CO4	Apply the process and primary operations in water treatment	PO-1, PO-2, PO3, PO4, PO5,	Apply	Conceptual &
	units	PO-6, PO7, PO-8, PO-9, PO-10,		Procedural
		PO-12,		
CO5	Apply the process in wastewater treatment and secondary	PO-1, PO-2, PO3, PO4, PO5,	Apply	Conceptual &
	operations in water & waste water treatment units.	PO-6, PO7, PO-8, PO-9, PO-10,		Procedural
		PO-11, PO-12,		

#### **CO - PO/PSO Matrix**

Course Code:					Progr	amme O	utcome (	PO)					PSO	PSO
	1	2 3 4 5 6 7 8 9 10 11 12											1	2
CO1	3	3	3	2	-	-	2	1	-	-	2	-	-	-
CO2	2	-	-	-	-	1	2	-	-	-	-	-	-	-
CO3	3	3	2	3	3	3	3	2	2	2	-	3	-	-
CO4	3	3	3	3	2	3	3	3	3	3	2	3	-	-
CO5	3	3	3	3	2	3	3	3	3	3	2	3		

**Signature of HoD** 

## KIET Group of Institutions

# **Department of Civil Engineering** Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: VI Course Name: Foundation Engineering B.Tech, Course Code: KCE 064 **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive Process	Knowledge Category
After comp	letion of the course, the student will be able to		Level (BL)	(KC)
CO1	Apply the process of soil exploration using various methods.	PO1,PO2,PO4 RO5,PO6,PO9, PO12	Apply	Factual, Conceptual
CO2	Analyze bearing capacity and settlement of soil for shallow foundation.	PO1,PO2,PO3, PO5,PO9,PSO1	Analyze	Factual, Conceptual, Procedural
CO3	Design the various types of shallow and deep foundation.	PO1,PO2,PO3,P O9,PO10,PSO1	Apply	Factual, Conceptual, Procedural
CO4	Understand the characteristics of well foundations and retaining wall.	PO1,PO2,PO9	Understand	Factual, Conceptual
CO5	Understand the concept of soil reinforcement	PO1,PO2,PO7,P O9,PO12	Understand	Factual, Conceptual

#### **CO - PO/PSO Matrix**

Course Code:					Pro	gram Ou	tcome (P	0)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	2	-	2	1	1	-	-	1	-	-	1	-	-
CO2	2	2	2	-	2	-	-	-	1	-	-	-	2	-
CO3	2	2	2	-	-	-	-	-	1	2	-	-	2	-
CO4	1	1	-	-	-	-	-	-	1	-	-	-	-	-
CO5	1	1	-	-	-	-	2	-	1	-	-	2	-	-
PO Target	1.6	2	2	2	1.5	1	2	-	1	2	-	1.5	2	-

**Signature of HoD** 

# **Department of Civil Engineering** Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: VI

#### Course Name: GIS & Remote Sensing, Course Code: KOE 066

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive	Knowledg eCategory
After comple	tion of the course, the student will be able to	PSOs	ProcessLevel (BL)	(KC)
CO1	Understand the components, concepts, principle and possible uses of Remote Sensing.	PO-1, PO- 7, PO-12	Understand	Conceptual
CO2	Apply the principle of photogrammetry and stereoscopy to obtain the position and height of objects.	PO-1, PO-5, PO-6, PO-7, PO-9, PO- 10, PO-12	Apply	Conceptual, Procedural
CO3	Apply remote sensing techniques using suitable data for solution of engineering problems.	PO-1, PO-2, PO-4, PO-5, PO-6, PO-7, PO-9, PO-10, PO- 12	Apply	Conceptual, Procedural
CO4	Understand spatial and attribute data, map projections and basic components of GIS.	PO-1, PO-7, PO- 12	Understand	Conceptual
CO5	Apply GIS for the management of land & water resources.	PO-1, PO-2, PO-4, PO-5, PO-6, PO-7, PO-9, PO-10, PO- 12	Apply	Conceptual, Procedural

Course Code:					Pro	gram Ou	tcome (PC	))					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	-	-	-	-	-	3	-	-	-	-	2	-	-
CO2	3	-	-	-	3	2	2	-	2	2	-	3	-	-
CO3	3	2	-	2	3	2	2	-	2	2	-	3	-	-
CO4	2	-	-	-	-	-	3	-	-	-	-	2	-	-
CO5	3	2	-	2	3	2	2	-	2	2	-	3	-	-
PO Target	2.6	2	-	2	3	2	2.4	-	2	2	-	2.6	-	-

#### <u>Department of Civil Engineering</u> Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 6<sup>th</sup> Course Name: Repair and Rehabilitation of Structures, Course Code: KCE 063

#### **Course Outcomes**

CO No.	Statement of Course Outcome letion of the course, the student will be able to	Relevant POs/PSOs	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	Understand the fundamentals of maintenance and repair strategies.	PO-1, PO-2, PO-3, PO-4, PO-5, PO6, PO-9, PO-10, PO-12	Apply	Factual, Conceptual, Procedural
CO2	Identify for serviceability and durability aspects of concrete.	PO-1, PO-2, PO-4, PO-5, PO6, PO-9, PO-10, PO-12	Apply	Factual, Conceptual, Procedural
CO3	Identify the materials and techniques used for repair of structures.	PO-1, PO-2, PO-4, PO-5, PO6, PO-9, PO-10, PO-12	Apply	Factual, Conceptual, Procedural
CO4	Decide the appropriate repair and retrofitting techniques.	PO-1, PO-2, PO-3, PO-4, PO-5, PO6, PO-9, PO-10, PO-12	Apply	Factual, Conceptual, Procedural
CO5	Use appropriate health monitoring technique and demolition methods.	PO-1, PO-2, PO-3, PO-4, PO-5, PO6, PO-9, PO-10, PO-12	Apply	Factual, Conceptual, Procedural

Course Code:					Prog	gram Ou	tcome (P	0)					PSO	PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	2	2	2	2	-	-	1	1	-	2	-	-
CO2	3	3	-	2	2	2	-	-	1	1	-	2	-	-
CO3	3	1	-	2	2	2	-	-	1	1	-	2	-	-
CO4	3	3	3	2	2	2	-	-	1	1	-	2	-	-
CO5	3	3	2	2	2	2	-	-	1	1	-	3	-	-
PO Target	3	3	1.8	2.6			-	-	-	-	-	2.2	-	-

Signature of HoD

#### <u>Department of Civil Engineering</u> Program: B.Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 6th Course Name: Transportation Engineering, Course Code: KCE-602

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive Process Level	Knowledge Category
After comp	letion of the course, the student will be able to	PSUs	(BL)	(KC)
CO1	Understand the history of road development, their alignment & Survey.	PO- 1,2,3,6,7,10,12	Understand	Factual
CO2	Design the various geometric parameters of road.	PO- 1,2,3,4,6,7,10,1 2	Analyse	Conceptual
CO3	Study the traffic characteristics & design of road intersections & signals.	PO- 1,2,3,4,6,7,10,1 2	Analyse	Conceptual
CO4	Examine the properties of highway materials & their implementation in design of pavements.	PO- 1,2,3,4,6,7,10,1 2	Understand	Factual
CO5	Learn methods to construct various types of roads.	PO- 1,2,6,7,10,12	Understand	Factual

Course Code:					Progr	amme O	utcome (	PO)					PSO	PSO
	1	1 2 3 4 5 6 7 8 9 10 11 12												2
CO1	2	2	1	-	-	1	1	-	-	1	-	1	-	-
CO2	3	2	1	1	-	1	2	-	-	2	-	1	-	-
CO3	3	2	1	1	-	1	2	-	-	2	-	1	-	-
CO4	3	2	1	1	-	1	2	-	-	2	-	1	-	-
CO5	3	2	-	-	-	2	2	-	-	1	-	1	-	-
PO Target	2.8	2	1	1	-	1.2	1.8	-	-	1.6	-	1	-	-

# **Department of Civil Engineering** Program: B. Tech (Civil Engineering) Academic Session: 2022-2023 Semester: VI

#### Course Name: Transportation Engineering Lab, Course Code: KCE 651

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant Pos /PSOs	Bloom's Cognitive	Knowledg e
After comple	tion of the course, the student will be able to	11.505	Process Level (BL)	Category (KC)
CO1	Determine properties of aggregates and assess its suitability in construction for transportation infrastructure	PO-1, PO- 2, PO-6, PO-9, PO- 10	Understand	Conceptual
CO2	Determine properties of bitumen and check its suitability for pavement construction	PO-1, PO-2, PO-6, PO-9, PO-10	Apply	Conceptual, Procedural
CO3	Conduct traffic and speed study on highway	PO-1, PO-2, PO-4, PO-5, PO-6, PO-9, PO-10	Apply	Conceptual, Procedural

#### **CO-PO/PSO Matrix**

Course Code:		Program Outcome(PO)												
	1	1 2 3 4 5 6 7 8 9 10 11 12											1	2
CO1	3	2	-	-	-	1	-	-	1	2	-	-	-	-
CO2	3	2	-	-	-	1	-	-	1	2	-	-	-	-
CO3	3	3	-	2	3	1	-	-	1	2	-	2	-	-
PO Target	3	2.33	-	2	3	1	-	-	1	2	-	2		-

Signature of HoD

#### <u>Department of Civil Engineering</u> Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: VI Course Name: Structural Detailing Lab, Course Code: KCE 653

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive	Knowledg eCategory
After comple	tion of the course, the student will be able to	PSOs	ProcessLevel (BL)	(KC)
CO1	Apply latest software tools for structural drafting and detailing of building components.	PO-1, PO- 2, PO-5, PO-8, PO- 9, PO-10, PO-12, PSO-1	Apply	Conceptual, Procedural
CO2	Create bar bending schedule for structural components of a building.	PO-1, PO-2, PO-5, PO-8, PO-9, PO- 10, PO-12, PSO-1	Apply	Conceptual, Procedural
CO3	Understand full set of structural drawing of a building	PO-1, PO-9, PO- 10, PO-12	Understand	Conceptual

#### **CO - PO/PSO Matrix**

Course Code:					Pro	gram Out	come (PC	))					PSO	PSO
	1	1 2 3 4 5 6 7 8 9 10 11 12											1	2
CO1	3	1	-	-	3	-	-	1	1	2	-	2	2	-
CO2													2	-
	3	1	-	-	3	-	-	1	1	2	-	1		
CO3	3	-	-	-	-	-	-	-	2	1	-	1	-	-
PO Target	3	1	-	-	3	-	-	1	1.33	1.66	-	1.3	2	-





#### KIET GROUP OF INSTITUTIONS, DELHI – NCR, GHAZIABAD DEPARTMENT OF CIVIL ENGINEERING



(An ISO – 9001:2008 Certified & 'A' Grade accredited Institution by NAAC)

Program: B.Tech (Civil Engineering) Academic Session: 2022-23 Semester: 6th Course Outcomes Course Name: Environmental Engineering Lab, Course Code : KCE 651

After completion of this course, the student will be able to

**CO-1:** Measure and compare the physical, chemical and biological properties of water & waste water. **CO-2:** Measure the level of air pollution (Particulate Matter) and noise pollution.

#### **CO-PO Mapping**

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO-1	3	2	2	1	3	3	3	2	1	1	-	2	-	-
CO-2	3	3	2	1	1	3	3	2	1	1	-	2	-	-

Ayush Kumar

HOD Civil Engineering

**Faculty Incharge** 

#### KIET Group of Institution Department of Civil Engineering Program: B. Tech (Civil Engineering) AcademicSession:2022-2023 Semester: VIII Course Name: Quality Management, Course Code: KOE085

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant	Bloom's Cognitive	Knowledge
After comp	letion of the course, the student will be able to	POs/PSOs	Process Level(BL)	Category(KC)
CO1	To understand the quality concept and its components	PO6,PO7,PO8,PO9 ,PO10,PO12	2	Conceptual
CO2	To understand the concepts of quality management and performance excellence in organization	PO6,PO7,PO8,PO9,P O10,PO12	2	Conceptual
CO3	To apply the quality concept in organizations such as manufacturing, service, healthcare, education, government, etc.	PO6,PO7,PO8,PO9,P O10,PO12	4	Procedural
CO4	To apply the several techniques and quality management tools	PO6,PO7,PO8,PO9, PO10,PO12	3	Procedural
CO5	To understand the quality system certification process.	PO6,PO7,PO8,PO9,P 010,PO12	2	Conceptual

#### **CO-PO/PSO Matrix**

Course Code:		Program Outcome(PO)												
KOE085	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	-	-	-	-	1	1	1	1	1	-	2	-	-
CO2	-	-	-	-	-	1	1	1	1	1	-	2	-	-
CO3	-	-	-	-	-	1	1	1	1	1	-	2	-	-
CO4	-	-	-	-	-	1	1	1	1	1	-	2	-	-
CO5	-	-	-	-	-	1	1	1	1	1	-	1	-	-
PO Target	-	-	-	-	-	1	1	1	1	1	-	1.8	-	-

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#### Program: B. Tech (Civil Engineering) Academic Session:2022-2023 Semester: VIII Course Name: Human Values in Buddha and Jain Darshan, Course Code: KOE-098

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/PSOs	Bloom'sCognitive ProcessLevel(BL)	Knowledge Category
After comp	letion of the course, the student will be able to			(KC)
		PO6, PO8 & PO9	2	Factual &
CO1	Understand the need and origin of Buddha and Jain Darshan			Conceptual
CO2	Understand the human being, the needs and activities of human being through Buddha Darshan	PO7, PO8 & PO9	2	Factual & Conceptual
CO3	Analyse Purpose and Program for a Human Being based on Bauddha Darshan.	PO8, PO9 & PO12	4	Factual & Conceptual
CO4	Understand the basic concepts of Jain Darshan.	PO7, PO8 & PO9	2	Factual & Conceptual
CO5	Analyse Purpose and Program for a Human Being based on Jain Darshan	PO8, PO9 & PO12	4	Factual & Conceptual

#### **CO-PO/PSOMatrix**

Course	ProgramOutcome(PO)											PS	PSO	
Code:														
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	-	-	-	-	2	2	3	2	-	-	1	-	-
CO2	-	-	-	-	-	2	2	3	2	-	-	1	-	-
CO3	-	-	-	-	-	2	2	3	2	-	-	1	-	-
CO4	-	-	-	-	-	2	2	3	2	-	-	1	-	-
CO5	-	-	-	-	-	2	2	3	2	-	-	1	-	-
PO						2	2	3	2			1		
Target														

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#### **Department of Civil Engineering Program: B. Tech (Civil Engineering)**

Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: VIII Course Name: Project Course Code: KCE 851

#### **Course Outcome**

CO No.	Statement of Course Outcome	Relevant POs/ PSOs	Bloom's Cognitive Process Level	Knowledge Category
After comp	letion of the course, the student will be able to		(BL)	(KC)
CO1	Work effectively as an individual and member of the team to solve complex engineering problems.	PO1, PO2, PO3, PO4,PO5,PO6, PO7,PO8,PO9, PO10 PO11 PO12 PS01	Apply	F,C,P
CO2	Apply engineering knowledge to solve real life problems and involve in self-learning process.	PO1, PO2, PO3, PO4,PO5,PO6, PO7,PO8,PO9, PO10, PO11, PO12, PSO1	Apply	C,P
CO3	Apply research based knowledge and methods to arrive at valid conclusions.	PO1, PO2, PO3, PO4,PO5,PO6, PO7,PO8,PO9, PO10, PO11, PO12, PSO1	Apply	F,C,P
CO4	Apply modern tools for analysis and design of complex engineering problems.	PO1, PO2, PO3, PO4,PO5,PO6, PO7, PO11, PO12, PSO1	Apply	C, P
CO5	Develop ethical solutions of engineering problems taking into account its impact on society, environment and sustainability.	PO1, PO2, PO3, PO4,PO5,PO6, PO7,PO8,PO9, PO10, PO11, PO12, PSO1	Create	С, Р
CO 6	Compose and present detailed project report of his/her work and defend effectively.	PO1, PO2, PO3, PO4,PO5,PO6, PO7,PO8,PO9, PO10, PO11, PO12, PSO1	Apply	Р

#### CO - PO/PSO Matrix

Course Code:		Programme Outcome (PO)							PSO	PSO				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	3	3	3	3	2	2	2	3	3	2	2	2	1	-
CO2	3	3	3	2	2	2	2	2	2	2	1	2	3	-
CO3	3	3	3	3	3	1	2	-	-	-	1	2	3	-
CO4	3	3	3	3	3	2	2	2	2	2	1	3	3	-
CO5	3	3	3	2	2	2	3	3	2	2	1	2	2	-
CO6	2	2	2	1	1	1	1	3	2	3	3	1	1	-
PO Target	2.8	2.8	2.8	2.3	2.1	1.6	2.0	2.6	2.2	2.2	1.5	2.0	2.1	e - ,

Signature of HoD

#### Program: B. Tech (Civil Engineering) Academic Session: 2022- 2023 Semester: 8 Course Name: Project Management & Entrepreneurship, Course Code: KHU 802

#### **Course Outcomes**

CO No.	Statement of Course Outcome	Relevant POs/	Bloom's Cognitive Process	Knowledge
After completion of the course, the student will be able to		PSOs	Level (BL)	(KC)
CO1	Understand the theories of entrepreneurship and Entrepreneurial Development Programmes.	6,7,8,9,11 ,12	Understand	Conceptual
CO2	Apply innovative business ideas and market opportunities.	6,7,8,9,11,12	Apply	Conceptual, Procedural
CO3	Understand the importance of Project Management and Project's life cycle	6,7,8,9,11,12	Understand	Conceptual
CO4	Analyze Project Financing and project report.	1,2,6,7,8,9,11,12	Analyze	Conceptual, Procedural
CO5	Analyze Social Sector Perspectives and Social Entrepreneurship.	6,7,8,9,11,12	Analyze	Conceptual, Procedural

Course Code:		Program Outcome (PO)								PSO	PSO			
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	-	-	-	-	1	1	2	2	-	3	1	-	-
CO2	-	-	-	-	-	2	2	3	3	-	3	2	-	-
CO3	-	-	-	-	-	3	3	2	3	-	3	2	-	-
CO4	1	1	-	-	-	2	3	2	3	-	3	2	-	-
CO5	-	-	-	-	-	2	3	3	2	-	3	3	-	-
PO Target	1	1	-	-	-	2	2.4	2.4	2.6	-	3	2	-	-

**Signature of HoD** 

	Course Outcomes	Bloomia	
	Engineering Physics: (BAS 101/201)	Cognitive	Knowledge
S. No.	Course Outcome/ Unit	Process Level	Category (KC)
After o	completion of the course, the student will be able to:	(BL)	
1	Apply the wave-particle duality in Quantum mechanics.	Apply	Conceptual, Procedural
2	Apply Maxwell's equations in electromagnetic field theory	Apply	Conceptual, Procedural
3	Apply the concept of interference and diffraction in wave optics.	Apply	Conceptual, Procedural
4	Illustrate the functioning, properties and applications of optical fibers and LASERS.	Apply	Conceptual, Procedural
5	Illustrate the properties and applications of superconducting materials and nanomaterials.	Apply	Conceptual, Procedural

1304	Course Outcomes	Plaomia	Knowledge
	Engineering Chemistry: (BAS 102/202)	Cognitive	
S. No.	Course Outcome/ Unit	Process Level	Category (KC)
After c	ompletion of the course, the student will be able to:	(BL)	A DESCRIPTION
1	Articulate the theoretical principles of Atomic and molecular structure, Chemistry of advanced Materials and Green Chemistry.	Articulate	Conceptual, Procedural
2	Apply the fundamental concepts of spectral techniques and stereochemistry for molecular structure identification.	Apply	Conceptual, Procedural
3	Analyze working of batteries, corrosion and Chemistry of engineering materials.	Analyze	Conceptual, Procedural
4	Analyze water impurities, boiler troubles in industry, calorific values of fuel and its environmental impact.	Analyze	Conceptual, Procedural
5	Apply the concept of polymers, Polymer Blends, composites and Organometallic compounds for industrial applications.	Apply	Conceptual, Procedural

	Course Outcomes	Plann's	
	Engineering Mathematics-I: (BAS 103)	Cognitive	Knowledge
S. No.	Course Outcome/ Unit	Process Level	Category (KC)
After co	ompletion of the course, the student will be able to:	(BL)	
1	Understand concept of rank, inverse, eigen values and eigen vectors and apply to solve engineering problem	Apply	Conceptual, Procedural
2	Understand the concept of successive differentiation and partial differentiation and apply to create curves	Apply	Conceptual, Procedural
3	Apply knowledge of partial differentiation in extrema, series expansion of function, approximation of errors and Jacobian	Apply	Conceptual, Procedural
4	Understand the concept of double, triple and improper integral and apply it to evaluate area and volume	Apply	Conceptual, Procedural
5	Apply the concept of vector calculus to analyze and evaluate directional derivative, lines, surface and volume integrals.	Apply	Conceptual, Procedural

Dr. Shailendra Kumar Tiwary Dean

B. Tech 1 Year & Applied Sciences

	Course Outcomes	Pleam's	
	Engineering Mathematics-II: (BAS 203)	Cognitive	Knowledge
S. No.	Course Outcome/ Unit	Process Level	Category (KC)
After c	ompletion of the course, the student will be able to:	(BL)	
1	Solve the ordinary differential equation of nth order with constant and variable coefficients arising in Engineering problems	Apply	Conceptual, Procedural
2	Solve ordinary and simultaneous differential equations using Laplace and Inverse Laplace transform	Apply	Conceptual, Procedural
3	Apply the concept of convergence of series and expansion of function using Fourier series	Apply	Conceptual, Procedural
4	Apply the concept of Limit, Continuity and differentiability in analyticity, Harmonicity of function and in conformal transformation	Apply	Conceptual, Procedural
5	Apply the concept of Cauchy Integral theorem, Cauchy Integral formula, singularity and calculus of residue in integrations	Apply	Conceptual, Procedural

Course Outcomes		Pleasets	
	Fundamentals Electrical Engineering: (BEE 101/201)	Cognitive	Knowledge
S. No.	Course Outcome/ Unit	Process Level	Category (KC)
After completion of the course, the student will be able to:		(BL)	
1	Understand the concepts of electric circuit solutions with DC supply using various network theorems	Understand	Conceptual
2	Apply the concepts of electrical circuits with AC supply in single and three phase system	Apply	Conceptual, Procedural
3	Analyze the equivalent circuit and performance of single phase AC transformer	Analyze	Conceptual, Procedural
4	Illustrate the working principle of induction motors, synchronous machines and DC machines	Analyze	Conceptual, Procedural
5	Describe the components of electrical system installations	Understand	Factual, Procedural

	Course Outcomes		Knowledge
100	Fundamental of Electronics Engineering (BEC 101/201)	Cognitive	
S. No.	Course Outcome/ Unit	Process Level	Category (KC)
After c	mpletion of the course, the student will be able to:	(BL)	
1	Apply the concept of PN Junction and devices for solving diode circuit problems.	Apply	Factual, Conceptual
2	Demonstrate the concept of BJT, JFET and MOSFET and solve problems on BJT and FETs.	Apply	Factual, Conceptual
3	Analyze the linear and non-linear applications of Operational amplifiers.	Analyze	Factual, Conceptual
4	Perform number systems conversions, binary arithmetic and minimize logic functions.	Apply	Factual, Conceptual
5	Acquire the fundamental concepts of communication technologies and use them to solve problems in Communication.	Apply	Factual, Conceptual

	Course Outcomes	Pleam's	
	Programming for Problem Solving: (BCS 101/201)	Cognitive	Knowledge
S. No.	. No. Course Outcome/ Unit		Category (KC)
After c	ompletion of the course, the student will be able to:	(BL)	
1	Understand algorithms and flow chart for the different types of problems	Understand	Conceptual
2	Translate the algorithms to programs & execution (in C language).	Apply	Conceptual, Procedural
3	Implement conditional branching, iteration, and recursion	Apply	Conceptual, Procedural
4	Decompose a problem into functions and synthesize a complete program using divide and conquer approach.	Analyze	Conceptual, Procedural
5	Use arrays, pointers and structures to develop algorithms and programs.	Apply	Conceptual, Procedural

	Course Outcomes	Ploam's	and the second second
	Fundamental of Mechanical Engineering (BME 101/201)	Cognitive	Knowledge
S. No.	Course Outcome	Process Level	Category (KC)
After co	ompletion of the course, the student will be able to:	(BL)	
1	Apply the concept of force resolution and stress and strain to solve basic Problems.	Apply	Procedural
2	Understand the construction details and working of internal combustion engines, electric vehicle, and hybrid vehicles.	Understand	Conceptual
3	Explain the construction detail and working of refrigerator, heat pump and airconditioner.	Understand	Conceptual
4	Understand fluid properties, conservation laws and hydraulic machinery used in real life.	Understand	Conceptual
5	Understand the working principle of different measuring instrument and mechatronics with their advantages, scope and Industrial application.	Understand	Conceptual

	Course Outcomes	Plaamia	
	Environment and Ecology (BAS104/204)	Cognitive	Knowledge
S. No.	Course Outcome / Unit	Process Level	Category (KC)
After co	ompletion of the course, the student will be able to:	(BL)	
1	Gain knowledge about environment and ecosystem towards sustainable development.	Remember	Conceptual
2	Learn about natural resources, its importance and environmental impacts on human interference, conservation of biodiversity.	Understand	Conceptual, Procedural
3	Gain knowledge about environmental pollution, its impacts on man & environment also control measures.	Understand	Conceptual, Procedural
4	Acquire values and ecofriendly attitudes towards understanding complex sustainable challenges, solving current environmental problems and its mitigation.	Understand	Conceptual, Procedural
5	Understand the environmental policies <b>Dr</b> les <b>hailendrank unare Diwary</b> nd legal) for environmental protection, social equity and conservatic <b>Defin</b> iodiversity.	Understand	Conceptual, Procedural
Service and	B. Tech I Year & Applied Sciences	ALL AN ANY ANY ANY ANY ANY ANY ANY ANY ANY	

	Course Outcomes	Blacer la	Knowledge
in the	Soft Skills (BAS105)	Cognitive	
S. No.	Course Outcome / Unit	Process Level	Category (KC)
After co	ompletion of the course, the student will be able to:	(BL)	
1	Write professionally in simple and correct English.	Apply	Factual, Conceptual
2	Demonstrate(Apply) active listening with comprehension, and the ability to write clear and well- structured emails and proposals.	Apply Create	Factual, Conceptual, Procedural
3	Learn the use of correct body language and tone of voice to enhance communication.	Remember Understand	Factual, Conceptual, Procedural
4	Acquire the skills necessary to communicate effectively and deliver presentations with clarity and impact	Apply	Conceptual, Procedural
5	Understand and apply some important aspects of core skills, like Leadership and stress management.	Understand	Conceptual, Procedural

N FINDYS	Course Outcomes	Disamia	
13571	Soft Skills (BAS205)	Cognitive	Knowledge
S. No.	Course Outcome / Unit	Process Level	Category (KC)
After co	ompletion of the course, the student will be able to:	(BL)	
1	Write professionally in simple and correct English.	Apply	Factual, Conceptual
2	Demonstrate(Apply) active listening with comprehension, and the ability to write clear and well- structured emails and proposals.	Apply	Factual, Conceptual, Procedural
3	Learn the use of correct body language and tone of voice to enhance communication.	Understand	Factual, Conceptual, Procedural
4	Acquire the skills necessary to communicate effectively and deliver presentations with clarity and impact	Apply	Conceptual, Procedural
5	Understand and apply some important aspects of core skills, like Leadership and stress management.	Understand	Conceptual, Procedural

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	Course Outcomes	Plaam's	
	Engineering Physics Lab: (BAS 151/251)	Cognitive	Knowledge
S. No.	Course Outcome/ Unit	Process Level	Category (KC)
After c	ompletion of the course, the student will be able to:	(BL)	
1	Apply the concept of Interference to determine the wavelength of light in Newton's ring experiment.	Apply	Conceptual, Procedural
2	Apply the concept of diffraction to study the spectrum for determining the wavelength of mercury light.	Apply	Conceptual, Procedural
3	Apply the concept of Hall's effect to find the physical parameters such as Hall's coefficient, carrier concentration, mobility of charge carriers etc.	Apply	Conceptual, Procedural
4	Apply the concept of black body radiation to verify from Stefan's law.	Apply	Conceptual, Procedural
5	Apply the concept of optical rotation to find the specific rotation of an optically active substance.	Apply	Conceptual, Procedural

	Course Outcomes	Ploom's	
	Engineering Chemistry Lab: (BAS 152/252)	Cognitive	Knowledge
S. No.	Course Outcome/ Unit	Process Level	Category (KC)
After co	ompletion of the course, the student will be able to:	(BL)	
1	Use different analytical instruments for chemical analysis.	Apply	Conceptual, Procedural
2	Analyze molecular /system properties such as surface tension, viscosity and conductance of solution, using viscometer and stalagmometer.	Analyze	Conceptual, Procedural
3	Apply titrimetric analysis for estimation of the hardness of water, chloride content and iron content.	Apply	Conceptual, Procedural
4	Synthesis of Phenol Formaldehyde Resin.	Synthesize	Conceptual, Procedural
5	Synthesis of Urea Formaldehyde Resin.	Synthesize	Conceptual, Procedural

and some fit	Course Outcomes	Discouls	a Balancer and Andrews	
	Basic Electrical Engineering Lab: (BEE 151/251)	Cognitive	Knowledge	
S. No.	Course Outcome/ Unit	Process Level	Category (KC)	
After co	ompletion of the course, the student will be able to:	(BL)		
1	Conduct experiments illustrating the application of KVL/KCL and network theorems to DC electrical circuits.	Apply	Conceptual	
2	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.	Apply	Conceptual	
3	Perform experiment illustrating BH curve of magnetic materials.	Analyze	Conceptual	
4	Calculate efficiency of a single phase transformer and DC machine.	Apply	Conceptual	
5	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.	Analyze	Conceptual	

all a set of	Course Outcomes	Diama	THE REAL PROPERTY OF
	Basic Electronics Engineering Lab (BEC 151/251)	Cognitive	Knowledge
S. No.	Course Outcome/ Unit	Process Level	Category (KC)
After c	ompletion of the course, the student will be able to:	(BL)	
1	Identify various types of Printed Circuit Boards (PCB) and perform artwork, etching, winding and soldering	Apply	Factual
2	Apply knowledge of primary electronic lab instruments including CRO, Multimeter, and Function Generator, Power Supply, Active, Passive Components and Bread Board.	Apply	Factual
3	Demonstrate the behavior of various devices and Investigate the use of Diode, BJT & FET in development of certain electronic circuits	Apply	Conceptual
4	<b>Demonstrate</b> the behavior of OPAMPS and Investigate the use of OPAMP in development of certain electronic solutions with possible variations to fine tune the output.	Apply	Conceptual
5	Verify truth tables of logic gates and Implement Boolean Function using logic gates	Analyze	Conceptual

	Course Outcomes	Places	
Sal-had	Programming for Problem Solving Lab: (BCS 151/251)	Cognitive	Knowledge
S. No.	Course Outcome/ Unit	Process Level	Category (KC)
After co	ompletion of the course, the student will be able to:	(BL)	
1	Implement the algorithm and flowchart for arithmetic and logical relation-based problems.	Apply	Conceptual, Procedural
2	Understanding the computer programming language concept.	Apply	Conceptual, Procedural
3	Develop the program and analyze with the concept of pointer and its usage.	Apply	Conceptual, Procedural
4	Simplify the solution of Complex problem by using the concept of array of structures	Analysis	Conceptual, Procedural
5	Implement the concept of storing of data and records in the memory using arrays, pointers and structures.	Apply and Analysis	Conceptual, Procedural

	Course Outcomes	DL 1	
	English Language Lab (BAS-155/ 255)	Cognitive	Knowledge
S. No.	Course Outcome/ Unit	Process Level	Category (KC)
After co	ompletion of the course, the student will be able to:	(BL)	
1	To understand the basic objective of the course by being acquainted with specific dimensions of communication skills i.e. Reading, Writing, Listening, Thinking and Speaking.	Understand	Procedural
2	To create substantial base by the formation of strong professional vocabulary for its application at different platforms and through numerous modes as Comprehension, reading, writing and speaking etc.	Evaluate	Procedural
3	To apply it at their work place for writing purposes such as Presentation/official drafting/administrative communication and use it for document/project/report/research paper writing.	Apply	Procedural
4	To evaluate the correct and error-free writing by being well-versed in rules of English grammar and cultivate relevant technical style of communication & presentation at their work place and also for academic uses.	Evaluate	Meta-Cognitive
5	To apply it for practical and oral presentation purposes by being honed up in presentation skills and voice- dynamics. They will apply techniques for developing, in the presentation skills and positive attitude leading to their professional competence.	Apply	Meta-Cognitive

#### B. Tech 1 Year & Applied Sciences

	Course Outcomes	Discosta	
	Engineering Graphics and Design Lab (BCE 151/251)	Cognitive	Knowledge
S. No.	Course Outcome/ Unit	Process Level	Category (KC)
After o	completion of the course, the student will be able to:	(BL)	
1	Understand the visual aspects of engineering design.	Understand	Conceptual, Procedural
2	Apply modern engineering tools necessary for engineering practice.	Apply	Conceptual, Procedural
3	Analyze Isometric views.	Analyze	Conceptual, Procedural
4	Understand engineering graphics standards and effective communication through graphics.	Understand	Conceptual, Procedural
5	Apply computer-aided geometric design, solid modelling and creating working drawings.	Create	Conceptual, Procedural

	Course Outcomes	Die		
	Workshop Practice Lab: (BWS 151/251)	Cognitive	Knowledge	
S. No.	Course Outcome/ Unit	Process Level	Category (KC)	
After co	ompletion of the course, the student will be able to:	(BL)		
1	Understand various engineering materials, tools, machines and measuring equipments.	Understand	Procedural	
2	Apply the knowledge of lathe and CNC machine for performing related operations.	Apply	Procedural	
3	Apply the knowledge of manufacturing in fitting and carpentry shop for performing related operations.	Apply	Procedural	
4	Apply the knowledge of welding, moulding, casting and gas cutting for performing related operations.	Apply	Procedural	
5	Apply the knowledge of 3D printing manufacturing technique	Apply	Procedural	

2-f

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	Mapping of Course Outcomes with Program Outcomes											
Engineering Physics: (BAS 101/201)												
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	2	2								1		2
CO-2	2	2			1	1	1			1		2
CO-3	2	1	1	1					1	1		2
CO-4	3	1	1	1	1	1	1			1		2
CO-5	2	1	1		1	1	1	1	1	1		2
Avg. Target Level	2.2	1.4	1	1	1	1	1	1	1	1		2

Mapping of Course Outcomes with Program Outcomes												
Engineering Chemistry: (BAS 102/202)												
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	2	1	1	1			1	1		1		1
CO-2	2	1	1	1	1	1				1	1	1
CO-3	2	2	1	1	1	1			9 <b>1</b> 9 - 14			1
CO-4	2	2		1	1	2	1					1
CO-5	2		2			2						2
Avg. Target Level	2	1.5	1.25	1	1	1.5	1	1		1	1	1.2

		Mappi	ng of C	Course	Outco	mes wi	ith Pro	gram	Outcor	nes		
			Engi	neerin	g Math	ematio	es-I: (B	BAS 10	3)			
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	2	2	1	1	1			1	Ser an			1
CO-2	2	2	1		12011			1				1
CO-3	2	2	1	an ton				1				1
CO-4	2	1	Sec. M					1		Sura news		1
CO-5	2	2					1.	1				1
Avg. Target Level	2	1.8	1	1	1			1				1

		Mappi	ng of (	Course	Outco	mes wi	ith Pro	gram (	Outcor	nes		
Contract of the second		Section Section	Engir	neering	, Math	ematic	s-II: (l	BAS 20	3)	The state	A. Constants	
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	2	2	1	1				1				1
CO-2	2	2	1	1				1	S. 16 - 70			2
CO-3	2	2	1	1				1				1
CO-4	2	2	1					1		19 19 A.		1
CO-5	2	2	1			0		1	1995 B			1
Avg. Target Level	2	2	1	1	A	N	f	- 1				1.2

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B. Tech 1 Year & Applied Sciences

		Mappi	ng of (	Course	Outco	mes wi	ith Pro	gram	Outcor	nes		and the second second
	100 A.	Funda	amenta	ls Elec	trical	Engine	ering:	(BEE	101/20	1)		
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	2	2					3					2
CO-2	3	2					3					2
CO-3	3	3		2	11.00		3				No. St. I.	3
CO-4	3	3		2	(10) (A)		3					3
CO-5	2					1	3					3
Avg. Target Level	2.6	2.5		2		1	3					2.6

E.		Mappi	ng of (	Course	Outco	mes wi	ith Pro	gram (	Outcor	nes		
	F	undan	nental	of Elec	ctronic	s Engi	neering	g (BEC	C 101/2	201)		
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	3	3	3	2	2							2
CO-2	3	3	3	2	2	1	1				Acres 1	2
CO-3	3	3	3	2	2	1	1	10834	100		Southers	3
CO-4	3	3	3	2	2	1	1		1			3
CO-5	2	2	2	3	3	3	3	1	2	2	2	3
Avg. Target Level	2.8	2.8	2.8	2.2	2.2	1.5	1.5	1	1.5	2	2	2.6

		Mappi	ng of (	Course	Outco	mes wi	ith Pro	gram	Outcor	nes		
		Prog	gramm	ing for	Probl	em Sol	ving: (	BCS 1	01/201	l)	AND AND A	
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	2	2		1	1			1	3	1	1	3
CO-2	2	2			1			1	3	1	1	3
CO-3	3	2	2	2	1	2	l delpart.	1	2	1	2	3
CO-4	3	3	2	1	1	2		1	2	1	1	3
CO-5	3	3	2	1	1	2		1	2	1	1	3
Avg. Target Level	2.6	2.4	2	1.33	1	2		1	2.4	1	1.2	3

		Mappi	ng of (	Course	Outco	mes w	ith Pro	gram	Outcor	nes		Competence Street
	F	undan	nental	of Mec	hanica	l Engi	neerin	g (BM)	E 101/	201)		
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	2	2	2	1.5		2		S. 275	- News	1. K. S. Q. B.		2
CO-2	2	2	2		800	2	The second	2		San Faller		2
CO-3	2	2	2	3		2	The seal		Selection			2
CO-4	2	2	2	3. V.		2				1. Same		2
CO-5	2	2	2	R. S.S.	1200	2						2
Avg. Target Level	2	2	2	W	B	f2						2

		Mappi	ng of (	Course	Outco	mes w	ith Pro	gram	Outcon	nes		
			Envir	onmen	t and ]	Ecolog	y (BAS	5104/20	)4)			
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	2	2					2			1		3
CO-2	3	1				2	2	2	2	1		3
CO-3	3	3	3	3	2	3	3	2	2	1	2	3
CO-4	2	2	2	2	1	2	3	1	2	2	3	3
CO-5	She She	1	1			2	2	1	1	2	1	3
Avg. Target Level	2.5	1.8	2	2.5	1.5	2.3	2.4	1.5	1.8	1.5	2	3
		Mappi	ng of C	Course	Outco	mes wi	th Pro	gram (	Outcon	nes		
		water and		So	ft Skill	ls (BAS	5105)	internet in the second se		The statement		
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1		1.1.1.00	2	2		2	1 -	2	2	3	1	Strange Berge
CO-2	The second	12	1	2		1	2	2	3	3	1	2
CO-3	Hilfeld A		1	dina di		1	1	2	3	3		2
CO-4				1	1	2	2	2	3	3	1	2
CO-5	A Second		1	1	1	2	1	2	3	3	2	3
Avg. Target Level			1.25	1.5	1	1.6	1.4	2	2.8	3	1.25	2.25

		Mappi	ng of (	Course	Outco	mes wi	ith Pro	gram	Outcor	nes		175
				So	ft Skil	ls (BAS	5205)			1 Palan		
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1			2	2		2	1	2	2	3	1	
CO-2			1	2	1629	1	2	2	3	3	1	2
CO-3			1			1	1	2	3	3		2
CO-4	1.000			1	1	2	2	2	3	3	1	2
CO-5		A STATE	1	1	1	2	1	2	3	3	2	3
Avg. Target Level			1.25	1.5	1	1.6	1.4	2	2.8	3	1.25	2.25

		Mappi	ng of (	Course	Outco	mes wi	ith Pro	gram (	Outcor	nes		
		Sum Berlin	Engin	eering	Physic	s Lab:	(BAS	151/25	51)		The state of the	
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	3	2	1			1			2	1	and all the	2
CO-2	3	2	1		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	1			2	1		2
CO-3	3	2	1		A. 10	1	A State of		2	1		2
CO-4	3	2	1	1.2		1			2	1		2
CO-5	3	2	1	No.		1	alu ja		2	1		2
Avg. Target Level	3	2	1	A	24	21			2	1		2

- not-prime a little	the second	Mappi	ng of (	Course	Outco	mes wi	ith Pro	gram (	Outcor	nes		
		I	Engine	ering (	Chemis	try La	b: (BA	S 152/	252)			
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	1	1				1	1					1
CO-2	1	2		2		1	1		E.C.M			1
CO-3	1	3		2	0.132	1	1		la finella	Les un		1
CO-4	1	3				1	1					1
CO-5	1	2				1	1					1
Avg. Target Level	1	2.2		2		1	1					1

		Mappi	ng of (	Course	Outco	mes wi	ith Pro	gram	Outcor	nes		
E to the set of the	10 sections	Bas	ic Elec	trical	Engine	ering l	Lab: (I	<b>BEE 15</b>	51/251)	And Dates		
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	2	2	1				3					2
CO-2	3	2	2			M. S.V	3					2
CO-3	3	2	2	2			3			Provide State		3
CO-4	3	2	2	2			3					3
CO-5	2	2	1		Shir!	1	3					3
Avg. Target Level	2.6	2	1.6	2		1	3					2.6

		Mappi	ng of (	Course	Outco	mes wi	ith Pro	gram	Outcor	nes	e an	
		Basi	c Elect	ronics	Engin	eering	Lab (I	BEC 15	51/251	)		(Page 1
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	3	1	3	2	3	1	2		3		The second	2
CO-2	3	1	3	2	3				2		Carles .	2
CO-3	3	2	3	2	3	2	2		2		direction.	2
CO-4	3	2	3	2	3	2	2		2	a desta in		2
CO-5	3	2	3	2	3	2	2		2	1		2
Avg. Target Level	3	1.6	3	2	3	1.75	2		2.2			2

		Mappi	ng of (	Course	Outco	mes wi	ith Pro	gram (	Outcor	nes		
		Progra	mmin	g for P	roblem	l Solvii	ng Lab	: (BCS	3 151/2	251)		
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	<b>PO-9</b>	PO-10	PO-11	PO-12
CO-1	3	3	2	1	1	Sec.		1. Section		No. Contraction	1967 222	2
CO-2	3	3	2	1	1	03311				2	2	2
CO-3	3	3	2	1	1							2
CO-4	3	3	3	1	1							2
CO-5	3	3	3	1	1		0			3	3	2
Avg. Target Level	3	3	2.4	1	1	X	R.		2	2.5	2.5	2

		Mappi	ng of (	Course	Outco	mes wi	th Pro	gram	Outcor	nes		and the Colora
			Engl	ish La	nguage	Lab (	BAS-1	55/ 255	5)			Concerning of
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	<b>PO-8</b>	PO-9	PO-10	PO-11	PO-12
CO-1		1								3	1	2
CO-2									2	3		2
CO-3								1100		3		2
CO-4										3		2
CO-5									m	3		2
Avg. Target Level		1							2	3	1	2

		Mappi	ng of (	Course	Outco	mes wi	ith Pro	gram	Outcor	nes	1.000	
	711.	Engin	eering	Graph	ics and	l Desig	n Lab	(BCE	151/2	51)		No. 1
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	1	1	1	1	1	No. 1997				1		3
CO-2	3	3	3	3	3			1	A.C.S.		1000	3
CO-3	3	3	3	3	3				ns intern		(Product	3
CO-4	1	1	1	1	1			a		1	1. S. 1.	3
CO-5	3	3	3	3	3						A State	3
Avg. Target Level	2.2	2.2	2.2	2.2	2.2					1		3

		Mappi	ng of (	Course	Outco	mes wi	ith Pro	gram	Outcor	nes		T Int al			
A CONTRACTOR OF THE REAL	Workshop Practice Lab: (BWS 151/251)														
РО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	<b>PO-7</b>	PO-8	PO-9	PO-10	PO-11	PO-12			
CO-1		SH and				1	1	3	2	1	1	2			
CO-2	distrain.	- Marsha		2012		1	1	3	2	1	1	2			
CO-3				1000		1	1	3	2	1	1	2			
CO-4	1. 2.03			1	1.65	1	1	3	2	1	1	2			
CO-5	NR. ALLA		<b>U</b> A MARKETO			1	1	3	2	1	1	2			
Avg. Target Level						1	1	3	2	1	1	2			

P.

Dr. Shailendra Kumar Tiwary Dean B. Tech 1 Year & Applied Sciences



# KIET Group of Institutions, Ghaziabad Department of Computer Applications

(An ISO - 9001: 2015 Certified & 'A' Grade accredited Institution by NAAC)

# FUNDAMENTAL OF COMPUTERS & EMERGING TECHNOLOGIES

#### **KCA-101**

# Tagging of COs with BLs and KCs

	Course Outcomes (COs)	Bloom's Knowledge Level (BL)	Knowledge Category (KC)
At the e	nd of this course, Student will be able to		
CO-1	Develop the basic knowledge of computer components and algorithms to solve problems using programming concepts.	Apply	Conceptual & Procedural
CO-2	Demonstrate the features and types of operating system and computer networks.	Understand	Conceptual
CO-3	Illustrate the basic services of Internet and the applications of IoT.	Understand	Conceptual
CO-4	Examine the features of Blockchain, Cryptocurrency and benefits of cloud computing.	Understand	Conceptual
CO-5	Discuss the emerging trends and technologies in the field of Information Technology.	Understand	Conceptual

#### **CO-PO/APO** Matrix

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	APO1	APO2
CO1	3	2			2	- C							2	
CO2	3													8
CO3	3	2	1	2	2		1			1	1			
CO4	3	14		2	2		1				~		1	1
CO5	3		1	3	3		2		1	1				
PO Torget	2	2	1	2 33	. 2.25		1.33	1		1	1		2	1

Ruper

Subject Teachers (Dr. Amit K Gupta)

Subject Teachers. (Ms. Divya Singhal)

Approved by 1303 Californt

Dr. Ajay K Shrivastava Head-CA

Anoth

Subject Expert (Dr. Akash Rajak)



KIET Group of Institutions, Ghaziabad Department of Computer Applications (NBA Accredited)



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# Problem Solving Using C (KCA-102)

#### Tagging of COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level	Knowledge Category (KC)
After	completion of the course, the student will be able to	(BL)	14 M
CO-1	Solve basic problems with the help of flowcharts and	Apply	Conceptual, Procedural
CO-2	Write 'C' programs that incorporate use of variables, operators and expressions along with data types	Apply	Factual, Conceptual, Procedural
CO-3	Implement programs using the control statements, functions, arrays, and strings	Apply	Conceptual, Procedural
CO-4	Write programs using the advanced concepts like pointers,	Apply	Conceptual, Procedural
CO-5	Apply file I/O operations on Binary and Text files.	Apply	Procedural, Conceptual

#### CO - PO / APO Matrix

KCA102:		Programme Outcome (PO)											АРО		
-031 12 07 1	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO1	3	3	-	-	-	-	3	-	2	-	l	1	3	-	
CO2	3	2	-	-	-	-	2	-	-	-	1	1	3	<u>#</u>	
CO3	3	2	-	-	-	-	2	-	-	-	1	1	3	-	
CO4	3	2	-	-	-	128	2	-	-	-	1	1	3	-	
CO5	3	2	-	-	-		2	-	/	-	1	1	3		
PO Target	3	2.2	-	-		-	2.2	-	2	-	1	1	3	-	

Dr. Sangeeta Arora (Subject Teacher)

W. Praghant Agarwal (Subject Teacher)

Approved by Aros

Mr. R N Panda

(Subject Expert)

Dr. Afrey K Shrivastana (Head-CA)



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# Principles of Management & Communication (KCA-103)

	ragging COs with BLs & F	CS	
S.N O	COURSE OUTCOME	Blooms' Cognitive Process (BL)	Knowledge Category (KC)
	After Completion of course, the student	will be able to:	
CO- 1	Describe primary features, processes and principles of management.	Understand	Conceptual
CO- 2	Explain the functions of management in terms of planning, organizing and decision making.	Apply	Conceptual
CO- 3	Illustrate key factors of leadership skill in directing and controlling business resources and processes.	Apply	Conceptual
CO- 4	Exhibit adequate verbal and non-verbal communication skills at workplace.	Apply	Factual & Conceptual
CO- 5	Demonstrate effective discussion, presentation and writing skills for various tasks and events like meeting, drafting of letter, proposal and report and their presentation etc.	Apply	Conceptual & Procedural

#### Tagging CO. . ....

#### **CO-PO-APO** Martix

	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	APO	APO
	1	2	3	4	5	6	7	8	9	0	1	2	1	2
CO1	:	121	-	-	-	-	1	-	-	-7	2			-
CO2	-		-	-	-	-	1	-	-	-	2	-	-	-
CO3		( <b>2</b> )	-	-	-		2	-	-	-	2		-	
CO4	-	-	-	-		2002	2	172	3		2	-		
CO5	-	360	<u>52</u> 0)	-	-		2	-	3	-	2	1.00		-
Avera ge (PO Target )							1.6		3		2		-	

Dr. Sonia Goutri (Subject Teacher/Expert)

Dr. Amit Kumar Arora (Subject Teacher/Expert)

Approved by Bos Palifont

Dr. Ajay K Shrivastava (Head-CA)





## **Discrete Mathematics (KCA-104)**

## Tagging of COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category (KC)
After co	mpletion of the course, the student will be able to	Level (BL)	()
COI	Examine the mathematical and logical notation for basic discrete structures such as Sets, Relations and Functions.	Apply	Conceptual & Procedural
CO2	Apply mathematical arguments using logical connectives and quantifiers to check the validity of an argument.	Apply	Conceptual & Procedural
CO3	Prove properties of Algebraic Structures like Groups, Rings and Fields.	Apply	Conceptual & Procedural
CO4	Solve recurrences relations and generating functions using mathematical logics.	Apply	Conceptual & Procedural
CO5	Illustrate the concept of combinatorics to solve basic problems in discrete mathematics.	Analyze	Conceptual & Procedural

#### **CO - PO/APO Matrix**

Course Code:			APO1	APO2										
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
COI	3	2	-	-	-	-	-	-	52 <b>-</b> 1	-	-	-	-	-
CO2	3	2	-	-	3 <del></del> 8	-	2	-		-		-		-
CO3	3	2		-			÷	-		-	-	-	-	-
CO4	3	2	-	-	-		1		-	-	-	-	-	-
CO5	3	2	-	<b>H</b>	<u> (2</u>	-	2			-	-	-		
PO Target	3	2	-	1417	-	-	1	1997	- 12			i.	-	

Subject Expert

Ms. Shalika Dality Approved by Bos Robilant

Dr. Ajay Kr. Shrivastava (Head-CA)


# KIET Group of Institutions, Ghaziabad Department of Computer Applications (NBA Accredited)

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# Computer Organization and Architecture (KCA-105)

N 121 57 1

## Tagging of COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge		
After co	empletion of the course, the student will be able to	Process Level (BL)	(KC)		
CO1	Determine the functional units of digital system and operations performed by arithmetic and logical unit.	Apply	Conceptual & Procedural		
CO2	Demonstrate the various processor organisations with different addressing modes.	Apply	Conceptual & Procedural		
CO3	Examine the organizations of control unit along with Instruction execution stages and pipeline concept.	Apply	Conceptual & Procedural		
CO4	Analyze the different types of memories and its organization.	Analyze	Conceptual & Procedural		
CO5	Illustrate the modes of communication between IO devices and CPU.	Apply	Conceptual & Procedural		

#### CO - PO/APO Matrix

Course Code:		Programme Outcome (PO)												
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	1	-	-	-	-	1	-	-	-	-	-	-	-
CO2	3	1	-		-	-	1	-	-	-	-		-	•
СОЗ	3	1	-		-		1	-	-	-	-		-	-
CO4	3	1		-	-	-	1	-	•	-	-		-	-
CO5	3	1	-		-	-	1	-	-	-	-		-	
PO Target	3	1	-	-		-	1				-	-	-	

**Subject Teachers** Dr. Ajay Kumar Shrivastava(Expert

Ms. Shalika

APProved by Bos Califan

Dr. Ajay Kr. Shrivastava (Head-CA)





# Problem Solving Using C LAB (KCA-151)

# Tagging of Cos with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category
After con	npletion of the course, the student will be able to	Level (BL)	(KC)
CO-1	Demonstrate Integrated Development Environment (IDE) for compilation, debugging and execution of C program.	Apply	Conceptual, Procedural
CO-2	Write programs using variables, operators, and expressions along with data types.	Apply	Conceptual, Procedural
CO-3	Implement programs for decision control structures, loops, and arrays.	Apply	Conceptual, Procedural
CO-4	Illustrate concepts of structure, pointer and user defined function.	Apply	Conceptual, Procedural
CO-5	Write programs using graphics and on file handling.	Apply	Procedural, Conceptual

### CO - PO/APO Matrix

KCA151:		Programme Outcome (PO)												
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	2	-	-	2 <del></del> 2		1	-	-	-	1	1	3	-
CO2	3	2	-	-		-	2	-		-	1	1	3	
CO3	3	2	-	-	8 <b>2</b>	125	2	-	-	-	1	1	3	-
CO4	3	2	-		3 <b>2</b> 3	-	2	2		-	1	1	3	-
CO5	3	2	-	-	-	-	2		-	-	1	1	3	_
PO Target	3	2	-	44	-		1.8	-	-	-	1	1	2	

Dr. Sangeeta Arora (Subject Teacher) NW Praghant Agar do (Subject Teach ~)

Approved by Aros. Dal. Part-

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Mr. R N Panda (Subject Expert)

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# Computer Organization & Architecture Lab (KCA-152)

### Tagging of COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	Examine the output of the basic logic gates for different	Apply	Conceptual
CO2	Demonstrate various combinational circuits for binary	Apply	Conceptual & Procedural
CO3	Illustrate combinational circuits and sequential circuits such as encoders/decoders, multiplexers/de-multiplexers, and	Apply	Conceptual & Procedural
CO4	flip-flops. Implement 2-bit Arithmetic Logic Unit using logic gates and multiplexers.	Apply	Conceptual & Procedural

#### CO - PO/APO Matrix

Course Code:				P	rograi	mme	Outcon	ne (PC	D)				APO1	APO2
Country Country	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	s <b>-</b>	-	-	-	2	-	-			H		-
CO2	3	2	-	-	-	-	1		•	٠	18	7		-
CO3	3	2				2	1	8				-	-	125
CO4	3	2	-	-	<b>4</b>	-	1	4	-	-	5 <b>-</b> 1	-	-	<u>1</u> 8
PO Target	3	2	-	-	-	-	1.25	-	-	-	-	-	9 <b>4</b> 9	1402

Subject Teachers

Subject Experi

Ms. Shalika Dr. Shashank Bhardawa Mr. Amit Goyal

Dr. Ajay Kumar Shrivastava

Dr. Ajay Kr. Shrivastava (Head-CA)

Approved by Bos. Pahilant



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### Professional Communication Lab (KCA153)

### Tagging COs with BLs & KCs

CO No.	CO Statement of Course Outcome	Bloom's Cognitive	Knowledge Category (KC)
Alter	able to	(BL)	Concentual
C01	Differentiate various situations to communicate effectively for conversation	Analyze	& Procedural
CO2	Utilize required voice dynamics to speak effectively for handling various situations at workplace like presentation and official	Apply	Conceptual & Procedural
CO3	speaking. Apply argumentation skills to participate in	Apply	Conceptual & Procedural
CO4	group discussion and role play. Evaluate to summarize topics for thematic presentation and presentation for seminar, workshop, and conference with focus on	Evaluate	Conceptual & Procedural
C05	Develop communicative abilities in all four dimensions of language.	Create	Conceptual, Procedural & Metacognitive

					C	O-PO-	APO	Mart	ix					
Course Code	PO -1	РО -2	PO -3	PO -4	РО -5	РО -6	РО -7	PO -8	РО -9	PO -10	PÖ -11	PO -12	PSO/ APO -1	PSO/ APO -2
CO-1							3		3		3			
CO-2	- 28						3		3		3			
CO-3							3		3		3			
CO-4							3		3		3			
CO-5	1						3		3		3			
Averag e (PO Target)		2					3		3		3			

Dr. Sonia Ogurr (Subject Teacher/Expert

Dr. Ajay K Shrivastava (Head-CA)

Approved by Bos Palipat



## KIET Group of Institutions, Ghaziabad Department of Computer Applications

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Artificial Intelligence

KCA-301

### Tagging COs with BLs & KCs

	Course Outcomes (COs)	Bloom's Knowledge Level (BL)	Knowledge Category (KC)
At the e	nd of this course, Student will be able to		
CO-1	Describe knowledge of the building blocks of Al as presented in terms of intelligent agents.	BL2	F,C
CO-2	Sketch the problem as state space graph with various searching techniques to solve a specific problem.	BL3	F,C,P
CO-3	Demonstrate knowledge and its representation in real world with logical reasoning steps.	BL3	F.C.P
CO-4	Construct AI algorithm for real world problems with different machine learning techniques.	BL3	F.C.P
CO-5	Illustrate knowledge about state-of-the-art algorithms used in pattern recognition area.	BL3	F,C,P

### **CO-PO/APO** Matrix

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	APO1	APO2
COL	3													
CO2	3	3	2	3									2	
CO3	3	3	2	2	2					-		1		
CO4	3	3	2	2	2							1	2	
COS	3	3	3	2	2								1	
PO Farget	3	3	2.25	2.25	2								1.67	

Subject Teachers: Mr. Prashant Agrawal Ms. Neelam Rawat SP-Mr. SiddheswahiDutt Mishra Stlk

Approved by Ros Calfor

Subject Expert: Ms. Neelam Rawat

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Head- CA) Dr.



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# Software Engineering (KCA-302)

### **Tagging Cos with BLs & KCs**

	Course Outcomes (COs)	Bloom's Knowledge Level (BL)	Knowledge Category (KC)
At the e	nd of this course, Student will be able to		FCP
CO-1	Describe Software Engineering Concepts and SDLC	BL2	1,0,1
00-1	models.	BL3	F,C,P
CO-2	with Modelling tools and Quality standards.	005	*
	Analyse design concepts to software development with	BL4	F,C,P
CO-3	software metrics methods.		ECP
CO-4	Categorize software testing techniques and its	BL4	1,0,1
00-1	implementation.		n G D
CO-5	Contrast Software project management activities will its parameters such as Cost, Efforts, Schedule/ Duration.	BL4	F,C,P

### CO-PO/APO Matrix

and and a second second				201						DO10	PO11	PO12	APO1	APO2
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	POID	FOIT	1012		1
CO1	3	2												2
CO2	3	2		1		1	2		2					3
CO3	3	3		2					2					2
CO4	3						2	-		-				1
C05	3	2		1				2						1.8
PO Target	3	2.25		1.33		1	2	2	2					1.0

Subject Expert: Mr. Rabi N. Panda

Subject Teachers: Ms. Neelam Rawar Dr. Arun K. Tripathi Dr. Amit Kumar

Approved by Bis Paliford

Dr. Ajay K Shrivaslari (Head-CA)

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### **Computer Networks** (KCA-303) MCA- Second Year (Third Semester)

### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category
After cor	npletion of the course, the student will be able to	Level (BL)	(KC)
CO 1	Describe communication models TCP/IP, ISO-OSI model, network topologies along with communicating devices and connecting media.	BL2	Factual, Conceptual
CO 2	Apply knowledge of error detection, correction and learn concepts of flow control along with error control.	BL3	Conceptual, Procedural
CO 3	Apply IP addressing techniques, subnetting along with network routing protocols and algorithms.	BL3	Conceptual, Procedural
CO 4	Explore transport layer protocols and their layout along with congestion control to maintain Quality of Service.	BL3	Conceptual, Procedural
CO 5	Understand applications-layer protocols and elementary standards of cryptography & network security.	BL2	Factual, Conceptual

### **CO - PO/APO Matrix**

KCA303				P	rogram	me O	utcom	e (P	0)		11-		APO-1	APO-2	
Rollow	1	2	3	4	5	6	7	8	9	10	11	12	ni o .		
CO1	3	-	-	-	-	-	2		-	-	82	-	-	-	
CO2	3	2	-	-		-	1	-	-	-	-	-	-		
CO3	3	2		-	-		2		-	-	-	( <b>*</b> )	-	-	
<u>CO4</u>	2	1	-	-	-	1	1	-	-	1	-	-	-	-	
C05	2	1	-	-	-	1	1	-	-	-	-	-	-	-	
PO Torget	26	1.5	-	-	-	1	1.4	-	-	-	-	-	-	-	

Subject Expert:

Dr. Arm K. Tripolle Dr. Ajay Shrivastava Prof. and Head (CA)

2. Dr. Sangeeta Arora

1. Dr. Arun Kumar Tripathi

Subject Teachers:

3. Dr. Vipin Kumar

Approved by



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### KCA-021: - Web Technology

#### **Course Objective**

On completion of this course, a student will be familiar with web development and web designing using client side and server side scripting programming and able to develop a web application using Java Framework. Students will gain the skills and project-based experience needed for entry into web application and development careers.

#### **Course Outcome**

	Table 1. Tagging cos with our		
CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After cor	npletion of the course, the student will be able to	Process Level (BL)	(KC)
60.1	Construct static web pages using HTML and CSS.	BL3	C,P
01	construct static tree poges con g	BI 3	C,P
CO 2	Develop interactive web page using JavaScript.		C.D.
CO 3	Develop dynamic web applications using servlet and JSP.	BL3	С,Р
CO 4	Illustrate Spring-based Java applications using Java configuration, XML configuration, annotation-based	BL4	C,P
	configuration, beans and their scopes, and properties.	BL5	C,P
CO 5	Test web services using Spring Boot and REST APT		

#### Table 1. Tagging COs with BLS & KCs

### Table 2: CO - PO/APO Matrix

	C.573 E			regran		Dutcon	ne (PC	))				APO	APO
			P	rogran	inte v		0	0	10	11	12	1	2
1	2	3	4	5	6	/	8	9	10	11	1	-	1
-	1928	1	1	1	•	1	-	-	-		2		2
-	-	1	-	1		2	-	•		-	2	-	2
-	•	2	-	2	•	2		-		-	1	-	1
-		1	-	1	-	2	•			-	3	-	3
-	3 <b>7</b> 0	2	( <b>u</b> )	3	17.1	2	-	-	-	-	1.8	-	1.8
-		1.4		1.6	-	1.8		-	<u> </u>	- teni			
	1	1 2     	1     2     3       -     -     1       -     -     1       -     -     2       -     -     1       -     -     2       -     -     2       -     -     1.4	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$								

### Faculty Members:

Dr. Vipin Kumar Mr. Naresh Chandra Mr. Ankit Verma

Dr. Ajay Kr. Shrivastava (Head-CA)

Affroved by Bos Pali Part



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### Course Outcome-Program Outcomes (PO) Mapping Cloud Computing (KCA-014)

2 4 3

## Tagging of COs with BLs & KCs

		1	1
CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category (KC)
After con	npletion of the course, the student will be able to	Level (BL)	(NO)
C01	Illustrate the concepts of Cloud Computing, key technologies, strengths, and limitations of cloud	Apply	Conceptual, Procedural
	computing. Apply cloud computing driven commercial systems such	Apply	Conceptual, Procedural
	as AWS and other business cloud applications in rearing. Analyze the knowledge and applications of cloud	Analyze	Conceptual, Procedural
CO3	computing in business, education and in personal. Connect with the concept of virtualization in cloud	Analyze	Conceptual, Procedural
CO4	computing.	Li Lintend	Concentual
C05	Discuss the security and privacy issues in cloud computing	Understand	Concepted

### CO - PO/APO Matrix

								c) =/-6	1		0		APO1	APO2	
		Programme Outcome (PO)													
Course Code:					5	6	7	8	9	10	11	12	1	2	
	1	2	3	4	5			_	-	2	3	2	-	3	
CO1	3	-	2	3	3	1	2	2	1	2		-		1,	
		2	3	3	3	-	3	1	1	1	3	2	-	3	
CO2	3	2					2	1	1	1	3	2	-	3	
CO3	3	2	3	3	3	-	3	-				2	1.	3	
	3	2	3	3	3	-	3	1	1	1	3	-	-		
CO4	-		-			2	1	-	2	2	1	-	-	1	
CO5	2	•	1		-			1.05	12	14	2.6	2	0	2.6	
PO Target	2.8	2	2.4	3	3	1.5	2.4	1.25	1.2	1.4					

(Subject Teacher)

Amit Goyal

(Subject Teacher)

Dr. Shashank Bhardwaj (Subject Expert)

Approved by Bos Palilan

(Subject Teacher)

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# KIET Group of Institutions, Ghaziabad Department of Computer Applications

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Artificial Intelligence Lab

### KCA-351

### Tagging COs with BLs & KCs

	Course Outcomes (COs)	Bloom's Knowledge Level (BL)	Knowledge Category (KC)
At the en	nd of this course, Student will be able to		
CO-1	Develop AI Game problems using Python such as Water- Jug and Missionaries-Cannibal	BL3	C,P
CO-2	Analyse AI searching algorithms such as BFS & DFS using python	BL4	C,P
CO-3	Implement Knowledge representation techniques using Pylegs library Pytholog Librara	BL3	C,P
со-4	Demonstrate machine Dearning algorithms of Classification & Clustering techniques	BL3	C,P

### **CO-PO/APO** Matrix

KCA-	POI	PO2	PO3	PO4	PO5	PO6	PO7	POS	PO9	PO10	PO11	PO12	APO1	APO2
351					-						1	1	2	
COI	1	2			2						1		2	
CO2	1	2			2						1			
CO3	1	2			2						1		2	
CO4	1	2	1	1	2						2		2	
PO Target	1	2	1	1	2						1.25		2	

Subject Teachers: Mr. Prashant Agrawal Ms. Neelam Rawat Mr. SiddheswahiDutt Mishra Subject Expert: Ms. Neelam Rawat

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Dr. Ajay K. Shrivalari (Head-CA)

Approved by Bor



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### Software Engineering Lab (KCA-352) Session 2020-21

### Tagging COs with BLs & KCs

	Course Outcomes (COs)	Bloom's Knowledge Level (BL)	Knowledge Category (KC)
At the e	end of this course, Student will be able to Prepare a SRS document in line with the IEEE	BL3	P,M
20-1	recommended standards. Sketch the graphic representation of various UML	BL3	P,M
CO-2	diagrams using designing tools.  Prenare test cases for given problem	BL4	P,M

#### **CO-PO/APO** Matrix

		-	DO7	PO4	POS	PO6	PO7	PO8	PO9	POIO	POIT	FU12	100.	2
	POI	PO2	PUS	104	105	141			3		2	100000		2
:01	2	3							3		2			4
02	3	3	2	1	2				3		2	3		3
203	2	1	2		2		3							222
PO	0.00	2 22	2	1	2		3		3		2	3		2.55
arge	2.33	2.33	2	1	2		3		3		-		1	4

Subject Expert: Mr. Rabi N. Panda

Subject Teachers: Ms. Ncelam Rawat Dr. Arun K. Tripathi Dr. Amit Kumar

Dr. Ajay K. Shrivartan (Head-CA)

Approved by Bog Cohilan

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### Mini Project (KCA353) MCA- Second Year (Third Semester)

со	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category (KC)
	At the end of course, the student will be able to	(BL)	(
CO1	Demonstrate the software project using life cycle models.	BL-3	C,P
CO2	Plan the SRS document as per project requirements.	BL-4	C,P
CO3	Apply suitable design technique for designing software	BL-3	C,P
CO4	Analyse the project by using a programming language.	BL-4	C,P
CO5	Design report and able to present their work	BL-3	C,P

#### CO – PO Mapping

		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Mini Project (KCA- 353)	CO1	1	2	2				3		1			3		3
	CO2	1	2	1				3		3			3		3
	CO3	2	2	2			5(•5)	3		2			3		3
	CO4	3	2	2				3		2			3		3
	CO5	1	1	2				3		3			3		3

**Faculty Members:** 

Mr. Naresh Chandra

Mr. Ankit Verma

Expert Members: Slower . Dr. Shashank Bhardwaj

Dr. Ajay Kr. Shrivastava (Head-CA)

Approved by Bos Palilant



KIET Group of Institutions, Delhi-NCR, Ghaziabad Department of Computer Applications (NBA Accredited)



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### COURSE OUTCOME AND MAPPING (MCA-II SEMESTER)

	Theory of Automata & Formal Languages (KCA-2	01)	
CO	Statement of Course Outcome	BL (1,2,3,4,5,6)	KC (F,C,P,M)
COI	Construct DFA, NFA with their minimization and conversion.	3	C,P
CO2	Implement regular expressions with closure and decision properties.	3	C,P
CO3	Represent the Context Free Languages grammar and its normal forms.	3	C,P
CO4	Design the PDA with deterministic and Nondeterministic properties	4	C,P
CO5	Construct the Universal Turing machine.	4	C,P

			Т	heory	of Auto	omata	& For	mal La	nguag	es (KC/	<b>\-201</b> )			
						CO-	PO/AF	O Mat	rix					
CO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	APO	APO
	1	2	3	4	5	6	7	8	9	0	1	2	1	2
CO1	3	3	-	-	-	-	-	-	-	-	-	-	-	-
CO2	3	3	-	-	-	-	-	-	-	-	-	-	-	-
CO3	3	2	-	-	-	-	-	1	1		-	-	-	-
CO4	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO5	3	3	-	-	-	-		-	-	-	-	-	-	-
Targe t PO	3	3	-	-	-	-	-	-	-	-	-	-	-	-

Ms. Shalika (Subject Teacher) dike This in the Mr. S D Mishra (Subject Teacher) Dr. Arun K Tripathi (Subject Expert) Approved by BoS (Mr. R N Panda) Dr. Ajay K Shrivastava Head-CA





### COURSE OUTCOME AND MAPPING (MCA-II SEMESTER)

	Object Oriented Programming (KCA-202)		
CO	Statement of Course Outcome	BL. (1,2,3,4,5,6)	KC (F,C,P,M)
COL	Implement the basic Programming concepts using Java.	3	C,P
CO2	Analyse OOP concepts like Inheritance, Polymorphism, Abstraction and Encapsulation, etc. using Java	4	C,P
_CO3	Implement exception handling and file handling in Java	3	C,P
CO4	Apply the concepts of multithreading and generic programming in Java	3	C,P
CO5	Design GUI applications using AWT and Swing in Java	5	C,P

				OI	ject ()	rientee	I Prog	rammi	ng (Ke	A-202				
and the ships and	-	- manholmatha				CO.	PO/AF	O Mat	rix			12 11 12 11 10 1		
со	PO 1	РО 2	РО 3	РО 4	PO 5	PO 6	PO 7	PO 8	PO 0	101	POI	POI 2	APO	APO 2
COL	3	3	aur				-	-	Int	-	-	-	3	-
CO2	3	3	3		2		2	-	-	-	-	-	3	1
CO3	3	3	3	-	2		2			-	-	-	3	1
CO4	3	3	3	-	2		2		-	-	-	-	3	1
CO5	2	2	2		2	~	1		-	-	-	-	-	2
Targe t PO	2.8	2.8	2.7 5	-	2	-	1.7	-	-	-	-	-	3	1.25

Mr. Naresh Chandra (Subject Teacher) Dr. Vipin Kumar (Subject Expert) Approved by BoS (Mr. R N Panda) Dr. Ajay K Shrivastava Head-CA





### COURSE OUTCOME AND MAPPING (MCA-II SEMESTER)

	Object Oriented Programming Lab (KCA-251)		
CO	Statement of Course Outcome	BL (1.2.3.4.5.6)	КС (F,C.P,M)
CO-1	Write programs in a Java programming environment.	3	C,P
CO-2	Execute Object Oriented Programs using Java programming.	4	C,P
· CO-3	Write robust file handling and Object-Oriented Programs with excepting handling approach using Java programming.	3	C,P
CO-4	Construct Object Oriented Programs with multi-threading and generic programming approach using Java programming.	3	C,P
CO-5	Design GUI application with AWT and Swing using Java programming	5	C,P

				Object	t Orien	ted Pro	ogramn	ning La	ab (KC	A-251)				
						CO-PC	D/APO	Matrix		-				
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	POII	PO12	APO1	APO2
CO1	3	3	-	-	-	-	-	-	-	-	-	-	3	-
CO2	3	3	3	-	2	-	2	-	-	-	-	-	3	1
CO3	3	3	3	-	2	-	2	-	-	-		-	3	1
CO4	3	3	3	-	2	-	2	-	-	-	-	-	3	1
CO5	2	2	2	-	2	-	1	-	-	-	-	-	-	2
Target PO	2.8	2.8	2.75	-	2	-	1.75	-	-	-	-	-	3	1.25

Mr. Naresh Chandra (Subject Teacher) Dr. Vipin Kumar (Subject Expert)

Approved by BoS (Mr. R N Panda)

Dr. Ajay K Shrivastava Head-CA



KIET Group of Institutions, Delhi-NCR, Ghaziabad Department of Computer Applications (NBA Accredited)



(An ISO - 9001: 2015 Certified & 'A' Grade accredited Institution by NAAC)

### COURSE OUTCOME AND MAPPING (MCA-II SEMESTER)

	Operating Systems (KCA-203)		
CO	Statement of Course Outcome	BL (1,2,3,4,5,6)	KC (F,C,P,M)
CO1	Understand main components, services, types, and structure of Operating Systems.	2	F,C
CO2	Apply various CPU scheduling algorithms for process execution	3	F,C,P
CO3	Apply the various concurrency control algorithms and techniques to handle	3	F,C,P
001	various concurrency control issues.	3	F,C,P
C04	Apply various memory management techniques.		FCP
CO5	Apply various I/O management, and disk management techniques.	3	r,c,r

					O	perating	y Syste	ms (KC	CA-203	5)				
				1.		CO-	PO/AF	O Mat	rix					
CO	PO	PO	PO 2	PO	PO 5	PO	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	APO l	APO 2
C01	2	-	-	4.	-	-	2	-	- '	-	-	-	-	-
CO2	2	1	-	-	-	-	2	-	-	-	-	-	-	-
CO3	3	2	-	-		-	2	_	-	-	-	-	-	-
CO4	2	1	-	-	-	-	2	-	-	-			-	-
CO5	3	2	-	-	-	-	2	-	-		-		-	-
Targe t PO	2.4	1.5	-	-	-	-	2	-		-	-	-	-	

Mr. Amit K Goyal (Subject Teacher) Mr. Ankit Verma (Subject Teacher) Dr. Arun K Tripathi (Subject Expert) Approved by BoS (Mr. R N Panda) Dr. Ajay K Shrivastava

Head-CA





## COURSE OUTCOME AND MAPPING (MCA-II SEMESTER)

	Database Management Systems (KCA-204)		
СО	Statement of Course Outcome	BL (1,2,3,4,5,6)	KC (F,C,P,M)
CO1	Construct overall structure of DBMS, ER Model for efficient Database Design	3	F,C,P
CO2	Express basic concepts of relational model and solutions to a query problem using SQL commands, relational algebra, tuple calculus and domain calculus	3	C,P
CO3	Analyze the need of Normalization while classifying any given relation to the desired normal form	4	C,P
CO4	Illustrate the concept of transaction processing and recovery mechanism from various transaction failures	3	C,P
CO5	Classify various concurrency control techniques on different transactions.	3	C,P

				Da	tabase	Mana	gemen	t Syste	ms (K	CA-204	)			-
						CO-	PO/AF	O Mat	rix					4.00
СО	PO	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	APO 1	2 APO
CO1	3	2	2	-	3	_	-	-	-	-	-	-	2	3
CO2	3	2	1	-	3	-	-	-	-	-	-	-	2	3
CO3	3	3	3	-	2	-	-	-	-		-	-	2	3
CO4	1	1	-	-	-	-	1	-	-		_	-		
CO5	2	1	2	-	-	-	1	-	-	_	-			
Targe t PO	2.4	1.8	2	-	2.6	-	1	-	-	-	-	-	2	3

Ms. Neelam Rawat (Subject Teacher) Dr. Ajay K Shrivastava (Subject Teacher) Mr. R N Panda (Subject Expert) Approved by BoS (Mr. R N Panda) Dr. Ajay K Shrivastava Head-CA





## COURSE OUTCOME AND MAPPING (MCA-II SEMESTER)

	DBMS Lab (KCA-252)		VC
СО	Statement of Course Outcome	BL (123.4,5,6)	F,C,P,M)
COI	Illustrate FR models using Core Table	3	C,P
CO2	Exercise SOL Commands to quart a database	3	C,P
CO3	Express PL/SQL programs for implementing stored procedures, stored functions cursors triggers and packages	3	C,P

						DBM	S Lab	(KCA-	252)					
						CO-	PO/AF	O Mat	rix				1.00	ADO
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1	PO1 2	APO 1	· 2
COL	2	2	-	-	3	-	-	-	-	-	-	-	-	3
CO2	2	2	_	-	3	-	-	-	-	-	-	-	2	3
CO3	-	-	-	-	3	_	2	-	-	-	-	-	2	3
Targe t PO	2	2	-	-	3	-	2	-	-	-	-	-	2	3

Ms. Neelam Rawat (Subject Teacher) Dr. Ajay K Shrivastava (Subject Teacher) Mr. R N Panda (Subject Expert) Approved by BoS (Mr. R N Panda) Dr. Ajay K Shrivastava Head-CA





# COURSE OUTCOME AND MAPPING (MCA-II SEMESTER)

CO	Data Structures & Analysis of Algorithms (KCA-205	5)	
	Course Outcome	BL	КС
COI	Demonstrate the	(1,2,3,4,5,6)	(F,C,P,M)
C02	linked list along with the analysis of algorithms.	3	C,P
002	Apply the concept of stack and queue to solve various problem	3	C,P
CO3	Illustrate the concerns of		
CO4	Compared the concept of graphs and trees & its applications.	3	C,P
004	Compare incremental and divide-and-conquer approaches of designing algorithms for problems such as sorting and searching	4	C,P
CO5	Analyze various design approaches such as sorting and searching. programming for solving real life problems.	4	C,P

			D	ata Sti	ructure	es & A	nalysis	of Alg	orithn	is (KCA	A-205)			
-						CO-	PO/AF	O Mat	rix					
CO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	APO	APO
	1	2	3	4	5	6	7	8	9	0	1	2	1	2
CO1	3	3	-	-	-	-	3	-	_	-	-		3	2
CO2	3	3	1	-	1	-	3	-	-	-	-	-	3	2
CO3	3	3	2	-	2	-	3		-	-		-	3	1
CO4	3	3	2	-	2	-	3	-	-	-	-	_	3	3
CO5	3	3	2	-	2	-	3	-	-	-	-	-	3	3
Targe				-		-		-	-	-	-	-		
t PO	3	3	1.7		1.7		3					1	3	2.2

Mr. Ankit Verma (Subject Teacher) 🤤 Ms. Shalika (Subject Teacher) Whalike Mr. Prashant Agarwal (Subject Expert) Approved by BoS (Mr. R N Panda)

Dr. Ajay K Shrivastava Head-CA





### COURSE OUTCOME AND MAPPING (MCA-II SEMESTER)

	Data Structures & Analysis of Algorithms Lab (KCA-2	53)	KC
СО	Statement of Course Outcome	BL (1,2,3,4,5,6)	(F,C,P,M)
CO1	Apply various operations on arrays.	3	C,P
CO2	Apply operations of Stacks and Queues using both arrays and linked lists.	3	C,P
CO3	Examine various searching and sorting algorithms.	3	C,P
CO4	Implement graph algorithms to solve the various real-life problems.	5	

			Data	a Struc	tures	& Ana	lysis of	f Algor	ithms	Lab (K	CA-253)	POL	APO	APO
СО	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0		2	1 3	2 3
CO1	3	3	-	-	2	-	3	-	-	-		_	3	3
CO2	3	3	-	-	2	-	3	-	-	-	-	-	3	3
CO3	3	3	-	-	2	-	3	-	-	-		-	3	3
CO4	3	3	-	2 <b>-</b> 2	2	-	3	-	-			-	3	3
Targe t PO	3	3	-	-	2	-	3	-	_	_				

Mr. Ankit Verma (Subject Teacher) Ms. Shalika (Subject Teacher) 18 hal Mr. Prashant Agarwal (Subject Expert)

Approved by BoS (Mr. R N Panda)

Dr. Ajay K Shrivastava

Head-CA



# KIET Group of Institutions, Delhi-NCR, Ghaziabad Department of Computer Applications (NBA Accredited)



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# COURSE OUTCOME AND MAPPING (MCA-II SEMESTER)

	Cyber Security (KCA-01)	PI	КС
-	Sectoment of Course Outcome	(1,2,3,4,5,6)	(F,C,P,M)
co	Statement of Course Outcome	2	С
COI	and need of security threat countermeasures.	2	С
CO2	Understand information repositories and related threats to them.	2	C
CO3	Elaborate Information System based activities and the for suggesting possible threats appear to them.	2	Р
CO4	Clarify the need of framing the required security per particular safeguarding the Information System under the use.	2	С
COS	Characterize the legal provisions available in mene- internationally for protecting intellectual properties.		

						Cyber :	Securit	ty (KC	A-01)					
						CO-	PO/AP	O Mat	rix	0.01	PO1	PO1	APO	APO
CO	PO	PO	PO	PO 4	PO <sup>-</sup>	PO 6	PO 7	PO 8	PO 9	0 0	1	2	1	2
COL	1	2	-	-	-	3	3	-	-	3	-	-	-	3
CO2	-	-	-	-	-	3	3	-	-	3	-	-	-	3
CO3	-	-	-	-	-	3	3	-	-	3	-	-	-	3
CO4	-	-	-	-		3	3	-	-	3	-		-	3
CO5	-	-	-	+-	-	3	3	-	-	3	-	-		
Targe	-	-												

ins Dr. Amit K Gupta (Subject Teacher) Dr. Amit Kumar (Subject Expert) Approved by BoS (Mr. R N Panda) Dr. Ajay K Shrivastava Head-CA

### CO COORDINATOR ODD SEM 2022-23

S.NO.	SUBJECT CODE	SUBJECT NAME	SUBJECT TYPE	FACULTY NAME	EMESTER	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1: 3	BP101T	HUMAN ANATOMY AND PHYSIOLOGY-	THEORY	Ms.Priya		
2	BP102T	PHARMACEUTICAL ANALYSIS I -Theory	THEORY	Dr.Abhay Bhardwaj		and a first
3	BP103T	PHARMACEUTICS I - Theory	THEORY	MR.PANKAJ		1 1
4	BP104T	PHARMACEUTICAL INORGANIC CHEMISTRY	THEORY	Ms. Shikha		
5	BP105T	COMMUNICATION SKILLS - Theory	THEORY	Dr Priyanka Sharma		
6	BP106RBT	REMEDIAL BIOLOGY -Theory	THEORY	Dr. Vinay		
7	BP106RMT	REMEDIAL MATHEMATICS -Theory	THEORY	Dr. Swati Maheshwari	1	
8	BP107P	HAP PRACTICAL	LAB	Mr. Praveen Kr. Dixit		10 2 2
9	BP108P	P.ANALYSIS PRACTICAL	LAB	Dr.Abhay Bhardwaj		18 gar 1
10	BP109P	PHARMACEUTICS PRACTICAL	LAB	Mr.Ghosh		
11	BP110P	IPC PRACTICAL	LAB	MR.SURYA		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
12	BP105T	COMMUNICATION SKILLS PRACTICAL	LAB	Dr Priyanka Sharma		1
13	BP106RBT	REMEDIAL BIOLOGY PRACTICAL	LAB	Dr.Richa		814
14	BP-301T	PHARMACEUTICAL ORGANIC CHEMISTRY-II	THEORY	Ms. Shipra		
15	BP-302T	PHYSICAL PHARMACEUTICS-I	THEORY	Dr. Kiran		C - K
16	BP-303T	PHARMACEUTICAL MICROBIOLOGY	THEORY	Dr. Monika kaurav		e Maria de Carlos
17	BP-304T	PHARMACEUTICAL ENGINEERING	THEORY	Mr. Sanjeev Chauhan		
18	BP-305P	PHARMACEUTICAL ORGANIC CHEMISTRY-II	LAB	Dr. Vaishali	C. Habak	
19	BP-306P	PHYSICAL PHARMACEUTICS-I PRACTICAL	LAB	Dr. N.G. Raghavendra R	3	
20	BP-307P	PHARMACEUTICAL MICROBIOLOGY	LAB	Mr. Harsh		
21	BP-308P	PHARMACEUTICAL ENGINEERING PRACTICAL	LAB	Mr. Sanjeev Chauhan		
22	KVE-301	UNIVERSAL HUMAN VALUES	THEORY	Mr.Praveen Dixit		
24	DRA.	MINOR SPECIALIZATION (DRA)		Dr. Vinay		
25	BP-501T	MEDICINAL CHEMISTRY-II	THEORY	DR VAISHALI	A Charles And	
26	BP-502T	INDUSTRIAL PHARMACY-I	THEORY	DRLAKSHMI	1 -	
27	BP-503T	PHARMACOLOGY-II	THEORY	Dr. Abhishek Kumar	-	
28	BP-504T	PHARMACOGNOSY-II	THEORY	DR RICHA	- A Loss Barrier	
29	BP-505T	PHARMACEUTICAL JURISPRUDENCE	THEORY	Mr. Harsh Rastogi	10 - 10 - 10 A	en e
30	BP-506P	INDUSTRIAL PHARMACY-I PRACTICAL	LAB	Mr. Harsh rastogi	5	3
31	BP-507P	PHARMACOLOGY-II PRACTICAL	LAB	Dr. Abhishek Kumar	-	
32	BP-508P	PHARMACOGNOSY-II PRACTICAL	LAB	DR DAKSH	-	
33	RPH-533	SOFT SKILLS		Ms Sugandha	_	
34		Had I for due to the	ALUE ADDED	Dr. Doonti Katiwa		
1314	VASIO	Herear the out perelyne	COURSE	Di. Deepti Katiyar		
35	BP-701T	INSTRUMENTAL METHODS OF ANALYSIS THEORY	THEORY	Ms. Shipra Singhal		
36	BP-702T	INDUSTRIAL PHARMACY II THEORY	THEORY	Mr.Anuj Pathak	1.0 0.0 0	
37	BP-703T	PHARMACY PRACTICE THEORY	THEORY	Dr. Shardendu Mishra	4	
38	BP-704T	NOVEL DRUG DELIVERY SYSTEM (NDDS)	THEORY	DR.LAKSHMI	-	
39	BP-705P	INSTRUMENTAL METHODS OF ANALYSIS	LAB	DR GARIMA		DD MACADALAN
40	BP-706PS	PS- PHYTOMEDICINE	LAB	Mr Dehaprasad Char	h 7	DR.NAGARAJAN
41	BP-706PS	PS- FORMULATION DEVELOPMENT	LAB	(A common CO and C	0-	Dr. Daksh Bhatia
42	BP-706PS	PS- DRUG DESIGN AND PROCESS CHEMISTRY		PO needs to be prepare	ed.	Mr. Debaprasad Ghosh
43	BP-706PS	PS- OHALITY CONTROL AND QUALITY		All Practice school		Dr. Garima Kapoor
10	BP-70CDC			teachers kindly prepa	re	Dr. Alankar Srivastav
44	0070005		LAB	by having a consultati amongst yourselves.	on )	Dr. Shardendu Kumar Mishra
45	10P-706PS	<b>IPS-ARTIFICIAL INTELLIGENCE</b>	LAB			Mr. Vidhu Savana

Principal KSOP OF PHA SCHOD ξ \* GHAIN

# **KIET Group of Institutions**

# Final Statements – KIET Group of Institutions

#### Vision statement

To become a leading institution nationally in the area of professional education, research & innovation for serving the global community.

### **Mission statements**

- To impart quality professional education, skills and values through outcome-based innovative teaching learning process in all spheres.
- To undertake collaborative interdisciplinary research as a co-requisite for professional education and simultaneously solve problems faced by society and industry.
- To create an ambience of innovation, entrepreneurship and consultancy for future leaders and innovators.
- To keep faculty members enthusiastic by continuous professional development and positive working environment.

#### **Core Values**

- Academic excellence
- Collaborative and interdisciplinary research culture
- Conducive eco-system
- Strong humanitarian values & Ethics

#### **Educational Objectives**

- To provide quality education for better academic achievements.
- To provide the essential skills to meet the current and future needs of industry & society.
- To encourage the students to attain excellent professional knowledge with holistic approach.
- To inculcate a successive learning environment that allows students to be adaptive and responsive to new avenues as well as career demands

### **KIET Group of Institutions**

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- To encourage the students to attain excellent professional knowledge with holistic approach.
- To inculcate a successive learning environment that allows students to be adaptive and responsive to new avenues as well as career demands

#### ANNEXURE I: PROGRAM OUTCOMES

- Pharmacy Knowledge: Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; and manufacturing practices.
- 2. Planning Abilities: Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.
- 3. Problem analysis: Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
- 4. Modern tool usage: Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.
- 5. Leadership skills: Understand and consider the human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.
- 6. Professional Identity: Understand, analyze and communicate the value of their professional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees).
- 7. Pharmaceutical Ethics: Honour personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.
- 8. Communication: Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.
- **9.** The Pharmacist and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice.
- **10. Environment and sustainability:** Understand the Impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- **11. 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. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.

### Session- 2022-23 Odd semester

#### Program- B. Pharm

Semester- 1

Course- Human Anatomy & Physiology-I (Theory)

Course Code- BP101T

Course Instructors- Mr. Praveen Kumar Dixit and Ms. Priya Bansal

### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome ompletion of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	<b>Discuss</b> the basic structure of human body parts including cell, tissue and various types of cells signaling pathways	Understand	Factual & Conceptual
CO2	<b>Illustrate</b> the structural and functional characteristics of bones and muscles of the human body.	Apply	Factual & Conceptual
CO3	Outline the composition and functions of blood and	Analyze	Factual & Conceptual
CO4	<b>Illustrate</b> the anatomical and physiological aspects of peripheral nervous system and sense organs.	Apply	Factual & Conceptual
CO5	Outline the structural and functional aspects of heart and its correlation with disorders in relation with ECG.	Analyze	Factual & Conceptual

#### Mapping of COs with POs

Course Code:							5			×	e ·
BP101T	1	2	3	4	5	6	7	8	9	10	11
C01	3						1	1	1		2
CO2	3						1	1	1		2
CO3	3						1	1	1		2
CO4	3						1	1	- 1		2
CO5	3						1	1	1	6 <sup>85</sup>	2
PO Target	3						1	1	1	12	2

Signature of CO- Coordinator: Ms. Priya Bansal

DK

1/95 Banse



### Session- 2022-23 Odd semester

Program- B. Pharm

Course- Pharmaceutical Analysis-I, Theory

Semester- 1 Course Code- BP102T

Course Instructors-Dr. Abhay Bhardwaj

#### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category
After co	mpletion of the course, the student will be able to	Level (BL)	(KC)
COI	<b>Illustrate</b> the basics and concepts of pharmaceutical analysis, its techniques and errors.	Apply	Factual & Conceptual
CO2	<b>Determine</b> the basics and concepts of acid base and non-aqueous titration and its application.	Apply	Factual & Conceptual
CO3	<b>Demonstrate</b> the basics and concepts of precipitation, complexometric, gravimetry and diazotization with its application	Apply	Factual & Conceptual
CO4	<b>Illustrate</b> the basics and concepts of redox titrations and its application.	Apply	Factual & Conceptual
CO5	<b>Demonstrate</b> the basics and concepts of electrochemical methods of analysis and its applications.	Apply	Factual & Conceptual

#### Mapping of COs with POs

Course Code:											
BP102T	1	2	3	4	5	6	7	8	9	10	11
C01	3	1	2	3	•	2	1	1	2	· -	3
CO2	3	1	2	2	-	2	1	1	2	-	3
CO3	3	1	2	3	-	2	1	1	2	-	3
CO4	3	1	2	3	-	1	1	1.	2	-	2
CO5	3	1	2	3	-	2	1	1	2		3
PO Target	3	1	2	2.8	-	1.8	1	1	2	-	2.8

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PH

Signature of CO- Coordinator (Dr. Abhay Bhardwaj

(Dr. Neha Rana)

#### Session- 2022-23 Odd semester

Program- B. Pharm .

Semester- 3

**Course-** Pharmaceutics I – Theory

Course Code- BP103T

Course Instructors- Mr. Debaprasad Gosh & Mr. Pankaj Bhatt

	Tagging COs with BLs & KCs		· · · · · · · · · · · · · · · · · · ·
CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category
After co	ompletion of the course, the student will be able to	Level (BL)	(KC)
CO1	Illustrate the rationale and concept behind the pharmacy profession, definition and types of dosage forms, pharmacopoeias, prescription & posology.	Apply	Factual, Conceptual
CO2	Explore different types of basic calculations involved in the pharmaceuticals, pharmaceutical powders & liquid dosage forms.	Analyze	Conceptual & Procedural
CO3	Outline monophasic liquid dosage forms, and biphasic liquid dosage forms like suspensions and emulsions.	Analyze	Conceptual & Procedural
CO4	Identify the formulation requirements of suppositories and different pharmaceutical incompatibilities.	Analyze	Conceptual & Procedural
CO5	Explore semisolid dosage forms.	Analyze	Conceptual & Procedural

#### Mapping of COs with POs

Course Code:											
BP103T	1	2	3	4	5	6	7	8	9	10	11
C01	3	1	1	-	1	1	1	-	- 1	1	1
CO2	3	1	1	-	-	1	1			-	1
CO3	3	1	1	-	-	1	1 .	-	-	-	1
CO4	3	1	2	-	-	1	1	-		-	1
CO5	3	1	2	-	-	1	1	- ,	-		1
PO Target	3	1	1.4	-	1	1	1	· - ,	-	1	1

Signature of CO- Coordinator\_



#### Session- 2021-22 Even semester

#### Program-B.Pharm

### Semester-1

Course-Pharmaceutical Inorganic Chemistry

#### Course Code- BP104T

Course Instructors-Ms. Shikha Kaushik and Mr. Surya Prakash Ms. Pragati Guptar J Tagging Cos with BLs and KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level	Knowledge Category
After com	pletion of the course, the student will be able to	(BL)	(KC)
COI	Understand the sources of impurities with their control and limit test of inorganic molecules in pharmaceuticals.	Understand	Conceptual, and Procedural
CO2	<b>Explain</b> buffers, major intra, and extracellular electrolytes, and combination therapy including ORS and dental products.	Understand	Conceptual, and Procedural
CO3	<b>Describe</b> the various inorganic gastrointestinal agents and antimicrobials.	Understand	Conceptual, and Procedural
CO4	Understand the expectorants, emetics, haematinics, and antidotes used in inorganic pharmaceuticals.	Understand	Conceptual, and Procedural
CO5	Elaborate on the handling and precautions of radiopharmaceuticals.	Understand	Conceptual, and Procedural

Shikha Kaushik



### Session- 2021-22 Even semester

### Program- B.Pharm

### Semester-1

Course- Pharmaceutical Inorganic Chemistry

### Course Code- BP104T

Course Instructors-Ms. ShikhaKaushik and Mr. Surya Prakash Ms. Prageti Guptat Mapping of COs with POs

Mapping	y of	COS	with	POs

PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
3	-	3	-	-	- ,	-	-	3	3	3
3		3	-		-	-	-	3	2	3
3	-	3		-	-	-	-	3	1	- 3
3	-	3			-		-	3	-	3
3	2	3	2		-	-	-	3	3	3
3	2	3	2	-	-			3	2.35	5 3
	PO1 3 3 3 3 3 3 3 3 3	PO1     PO2       3     -       3     -       3     -       3     -       3     -       3     -       3     -       3     -       3     -       3     2       3     2	PO1       PO2       PO3         3       -       3         3       -       3         3       -       3         3       -       3         3       -       3         3       -       3         3       -       3         3       -       3         3       -       3         3       2       3         3       2       3	PO1       PO2       PO3       PO4         3       -       3       -         3       -       3       -         3       -       3       -         3       -       3       -         3       -       3       -         3       -       3       -         3       -       3       -         3       2       3       2         3       2       3       2	PO1       PO2       PO3       PO4       PO5         3       -       3       -       -         3       -       3       -       -         3       -       3       -       -         3       -       3       -       -         3       -       3       -       -         3       -       3       -       -         3       2       3       2       -         3       2       3       2       -         3       2       3       2       -	PO1       PO2       PO3       PO4       PO5       PO6         3       -       3       -       -       -         3       -       3       -       -       -         3       -       3       -       -       -         3       -       3       -       -       -         3       -       3       -       -       -         3       -       3       -       -       -         3       2       3       2       -       -         3       2       3       2       -       -         3       2       3       2       -       -	PO1       PO2       PO 3       PO 4       PO 5       PO 6       PO 7         3       -       3       -       -       -       -         3       -       3       -       -       -       -         3       -       3       -       -       -       -         3       -       3       -       -       -       -         3       -       3       -       -       -       -         3       -       3       -       -       -       -         3       -       3       -       -       -       -         3       2       3       2       -       -       -         3       2       3       2       -       -       -         3       2       3       2       -       -       -	PO1       PO2       PO 3       PO 4       PO 5       PO 6       PO 7       PO 8         3       -       3       -       -       -       -       -         3       -       3       -       -       -       -       -         3       -       3       -       -       -       -       -         3       -       3       -       -       -       -       -         3       -       3       -       -       -       -       -         3       -       3       -       -       -       -       -         3       -       3       -       -       -       -       -         3       2       3       2       -       -       -       -         3       2       3       2       -       -       -       -       -         3       2       3       2       -       -       -       -       -         3       2       3       2       -       -       -       -       -	PO1       PO2       PO3       PO4       PO5       PO6       PO7       PO8       PO9         3       -       3       -       -       -       -       -       3         3       -       3       -       -       -       -       -       3         3       -       3       -       -       -       -       -       3         3       -       3       -       -       -       -       -       3         3       -       3       -       -       -       -       -       3         3       -       3       -       -       -       -       -       3         3       -       3       -       -       -       -       3         3       -       3       -       -       -       -       3         3       2       3       2       -       -       -       -       3         3       2       3       2       -       -       -       -       3         3       2       3       2       -       -       -       -       3 </td <td>PO1       PO2       PO3       PO4       PO5       PO6       PO7       PO8       PO9       PO10         3        3            3       3         3        3            3       3         3        3            3       2         3        3            3       2         3        3            3       1         3        3           3       1         3        3           3       3          3       2       3       2           3       3       3         3       2       3       2           3       3       3         3       2       3</td>	PO1       PO2       PO3       PO4       PO5       PO6       PO7       PO8       PO9       PO10         3        3            3       3         3        3            3       3         3        3            3       2         3        3            3       2         3        3            3       1         3        3           3       1         3        3           3       3          3       2       3       2           3       3       3         3       2       3       2           3       3       3         3       2       3

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### Session- 2022-23 Odd semester

Program- B. Pharm

Semester-1

**Course-** Communication Skills

1

Course Code- BP105T

Course Instructors-Dr. Kavita Tiwari

### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category
After co	mpletion of the course, the student will be able to	Level (BL)	(KC)
COI	Figure out the communication strategies and principles along with the various perspectives at workplace.	Analyze	Conceptual & Procedural
CO2	Practice the verbal & Non-verbal communication skills including the cognition of various communication style matrix.	Apply	Conceptual
CO3	Exercise the key principles of effective presentation techniques.	Apply	Conceptual & Procedural

### Mapping of COs with POs

Course Code:											·
BP105T	1	2	3	4	5	6	7	8	9	10	11
C01	-	-	-	-	-	-	-	3	3	3	2
CO2	-	-	-	-	-	-	-	3	2	3	2
CO3	-	-	-	-	· -	-	<b>H</b> p.	3	2	3	2
PO Target	-	-	-	-	-	-	-	3	2	3	2



Signature of CO- Coordinator



#### Session- 2022-23 Odd semester

Program- B. Pharm

Semester-1

Course- Communication Skills

Course Code- BP105T

Course Instructors-Dr. Babita Tyagi

#### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After co	mpletion of the course, the student will be able to	Level (BL)	(KC)
COI	Figure out the communication strategies and principles along with the various perspectives at workplace.	Analyze	Conceptual & Procedural
CO2	Practice the verbal & Non-verbal communication skills including the cognition of various communication style matrix.	Apply	Conceptual
CO3	Exercise the key principles of effective presentation techniques.	Apply	Conceptual & Procedural

#### Mapping of COs with POs

Course Code:	-			÷.,						×	
BP105T	1	2	3	4	5	6	7	8	9	10	11
CO1	-	-	-	-	-	-	-	3	3	3	2
CO2	-	-	-	-		-	-	3	2	3	2
CO3	-	-	-	-	-	-	-	3	2	3	2
PO Target	-	- 1	-	-	-	-		3	2	3	2

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Dr Babita Tyagi Signature of CO- Coordinator TO TO THE PHARMACH

### Session- 2022-23 Odd semester

Program- B. Pharm

Semester-1

Course- Remedial Biology- Theory

Course Code-BP106RBT

Course Instructors-Dr. Vinay Kumar and Dr. Richa Goel

### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After co	ompletion of the course, the student will be able to	Level (BL)	(KC)
CO1	<b>Describe</b> the basic components of anatomy& morphology of plants.	Understand	Factual and Conceptual
CO2	Explain the concept of Body fluids, circulatory system, digestive system and respiration system.	Understand	Factual and Conceptual
CO3	Restate the basic concepts of excretory system, human reproduction system, neural, chemical control and coordination	Understand	Factual and Conceptual
CO4	Summarize the basic concept of plant nutrition and nitrogen metabolism with the process of photosynthesis.	Understand	Factual and Conceptual
CO5	Elaborate about plant cell and tissues with the mechanism of plant respiration, its growth and development.	Understand	Factual and Conceptual

### Mapping of COs with POs

Course Code:		Programme Outcome (PO)											
DI TOORDI	1	2	3	4	5	6	7	8	9	10	11		
CO1	1	-	-	-	-	-	-	•	-	-	3		
CO2	3	-	-	-	-	1	-	-			2		
CO3	3	-	-		-	1	-	-	-	-	2		
CO4	1	-	-	-		-	-	-	-	-	3 .		
CO5	1	-1	-	-	- "	-		•	-	-	3		
PO Target	1.8		-9		19.,	1					2.6		

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Signature of CO- Coordinator\_



### Session- 2022-23 Odd semester

Program- B. Pharm

#### Semester-1

Course- REMEDIAL MATHEMATICS

Course Code- BPRMT106

Course Instructors- Dr Swati Maheshwari & Dr. Neelam Sharma

### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After co	empletion of the course, the student will be able to	Level (BL)	(KČ)
CO1	Apply the concepts of partial fractions, logarithms, real valued functions, limits and continuity in Chemical Kinetics & Pharmacokinetics.	Apply	Conceptual & Procedural
<u> </u>	in solving Pharmacokinetics equations.	Apply	Conceptual & Procedural
03	Apply the concepts of derivatives of a function of one variable to find extrema at a point	Apply	Conceptual
CO4	Apply the concepts of coordinate geometry integration in Pharmaceutical problems	Apply	Conceptual
CO5	Apply the concepts of Differential equations and Laplace transformations in solving Chemical Kinetics & Pharmacokinetics equations.	Apply	& Procedural Conceptual & Procedural

### Mapping of COs with POs

Course Code:											
BPRMT106	1	2	3	4	5	6	7	8	9	10	11
C01	2	-	-	-	-	-	1		1		1
CO2	2	1	1	1	-	1	1			_	1
CO3	2	1	2	-	-	1	1		1	-	1
CO4	2	1	1	-		-	1		1	-	1
C05	2	1	2			1	1	-	•	-	1
PO Target	2	1	1.5	1	-		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-	•	-	1
						-		-	1	-	1

Signature of CO- Coordinator

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### Session- 2021-22 Odd semester

Program- B. Pharm

Semester-1

Course- Human Anatomy & Physiology-I (Practical)

Course Code- BP107P

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Course Instructors- Mr. Praveen Kumar Dixit and Ms. Priya Bansal

### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category	
After co	mpletion of the course, the student will be able to	Level (BL)	(KC)	
CO1	<b>Illustrate</b> the microscopical characteristics of different types of cells and tissues in human body under the light of microscopic techniques.	Analyze	Conceptual & Procedural	
CO2	<b>Illustrate</b> the concept for identification of various types of bones and joints under the background of their anatomical correlation.	Analyze	Conceptual & Procedural	
CO3	Assess the methods and techniques to measure the various components of blood.	Evaluate	Conceptual & Procedural	

#### Mapping of COs with POs

Course Code:											
BP107P	1	2	3	4	5	6	7	8	9	10	11
C01	3	1	1	2	1	-		1	2		2
CO2	3	1	1	2	1			1	2		2
CO3	3	1	1	2	1			1	2		2
PO Target	3	1	1	2	1			1	2		2

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Signature of CO- Coordinator: Mr. Praveen Kumar Dixit

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### Session- 2022-23 Odd semester

Program- B. Pharm

Semester-1

Course- Pharmaceutical Analysis-1

Course Code- BP108P

Course Instructors- Dr. Abhay Bhardwaj and Dr Neha Rana

### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category
After co	ompletion of the course, the student will be able to	Level (BL)	(KC)
CO1	<b>Understand</b> the qualitative and quantitative analysis of molecules in Pharmaceuticals by volumetric	Understand	Conceptual & Procedural
CO2	analysis. Elaborate the standardization of the given strength of	Understand	Conceptual & Procedural
CO3	Explain the assay of given samples of pharmaceutical molecules.	Understand	Conceptual & Procedural

### Mapping of COs with POs

<b>Course Code:</b>											
DD 108P	1	2	3	4	5	6	7	8	9	10	11
BF 1081	3		3	-	-	-	-	-	3	3	3
	3		3				-	-	3	2	3
CO2		-	3						3		3
CO3	3	-		-							-
PO Target	3	-	3	-	-	-	-	-	3	2.5	3

Signature of Co-Coordinator

(Dr. Abhay Bhardwaj) (Dr. Neha Rana)


## Session- 2022-23 Odd semester

### Program- B. Pharm

### Semester- 1

Course- Pharmaceutics- I Practical

### Course Code- BP109P

Course Instructors- Mr. Debaprasad Ghosh and Mr. Pankaj Bhat

## Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	<b>Exercise</b> the preparation and dispensing of monophasic liquid dosage forms such as syrups, elixirs, linctus, solutions, gargles and mouthwashes.	Apply	Conceptual & Procedural
CO2	<b>Exercise</b> the preparation and dispensing of biphasic liquid dosage forms such as suspensions and emulsions.	Apply	Conceptual & Procedural
CO3	Exercise the preparation and dispensing of different types of powders and granules.	Apply	Conceptual & Procedural
CO4	Exercise the preparation and dispensing of semisolid dosage forms including ointments and creams.	Apply	Conceptual & Procedural
CO5	Exercise the preparation and dispensing of suppositories.	Apply	Conceptual & Procedural

### Mapping of COs with POs

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Course Code:											
BP109P	1	. 2	3	4	5	6	7	8	.9	10	11
C01	3	-	2	-	2	2	2	- 1	3		3
CO2	3	-	2	-	2	2	2	. 1	3	-	3
CO3	3	-	2		2	2	2	1	3		3
CO4	3	-	2	- 1	2	2	2	1	3		3
CO5	3	- <u>-</u> 2	2	-	2	2	2	1	3	-	3
PO Target	3	-	2	-	2	2	2	1	3		3

2





## Session- 2022-23 Odd semester

Program- B. Pharm

Semester- 1

Course- Pharmaceutical Inorganic Chemistry

Course Code- BP110P

Course Instructors- Mr. Surya Prakash

## Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome ompletion of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	Understand the sources of impurities with their control and Limit test of inorganic molecules in	Understand	Conceptual & Procedural
CO2	Explain the Identification test and test of purity of	Understand	Conceptual & Procedural
CO3	Elaborateon the Preparation of inorganic pharmaceuticals and their assays.	Understand	Conceptual & Procedural

Mapping of COs with POs

Course Code:											
BP110P	1	2	3	4	5	6	7	8	9	10	11
CO1	3	1	3	1	1	-	1	1	3	3	3
CO2	3	1	3	1	1	-	1	1	3	2	3
CO3	3	1	3	1	1	-	1	1	3	1	3
PO Target	3	1	3	1	1	-	1	1	3	2	3



### Session- 2022-23 Odd semester

### Program- B. Pharm

Semester- 1

Course- Communication Skills (Practical)

Course Code- BP111P

Course Instructors- Dr. Priyanka Sharma

### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome ompletion of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	Attain the cognizance to exhibit interest and participate in the synergy & team work with the help	Apply	Conceptual & Procedural
CO2	Apply the pronunciation etiquette to build the self- confidence with improved command over the mechanics of English language	Apply	Conceptual & Procedural
CO3	Practice both formal effective verbal and non-verbal communication skills to make information more accessible to the audience.	Apply	Conceptual & Procedural

### Mapping of COs with POs

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Course Code:				1				1			
BP111P	1	2	3	4	5	·6	7	8	9	10	11
C01	-		-	-	-	-	-	3	3	3	2
CO2		-	-	-	-	-		3	2	3	2
CO3	-	-	-	-	-	-	-	3	2	3	2
PO Target	-	-	-	-	-	-	-	3	2	3	2

Signature of CO- Coordinator



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### Program- B. Pharm

Semester-1

Course- Remedial Biology- Practical

Course Code-BP112RBP

Course Instructors- Dr. Richa Goel/ Dr. Vinay Kumar

## Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category
After co	mpletion of the course, the student will be able to	Level (BL)	(KC)
CO1	<b>Demonstrate</b> microscope, section cutting, mounting and staining of slides.	Apply	Procedural
CO2	Explain various parts of pants.	Understand	Procedural
CO3	<b>Examine</b> the tissues pertinent to Stem, Root, Leaf, seed, fruit and flower and bones.	Apply	Procedural
CO4	<b>Determine</b> the blood group, blood pressure and tidal volume in human	Apply	Procedural

### Mapping of COs with Pos

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Course Code: BP112RBP	Programme Outcome (PO)										
DF112KDF	1	2	3	4	5	6	7	8	9	10	11
C01	3	-	2	2	-	-	-	-	1	-	2
CO2	3	-	2	-	-	-	-	1	1	1	2
CO3	3	-	2	1	-		· - ·	-	1	-	2
CO4	3	-	2	2	-	-	-	1	2	-	2
PO Target	3		2	1.25				1	1.25	1	2

Signature of CO- Coordinator



## Session- 2022-23 Odd semester

#### Program- B. Pharm

Semester- 3

Course- Pharmaceutical Organic Chemistry-II- Theory

Course Code- BP301T

Course Instructors- Mr. Surya Prakash and Ms. Shipra Singhal

## Tagging COs with BLs & KCs

CO No. After c	CO  Statement of Course Outcome    No.  fter completion of the course, the student will be able to		Knowledge Category (KC)
COI	Illustrate the structure, properties, chemical reactions and uses of benzene and its derivatives.	Apply	Factual & Conceptual
CO2	O2 Examine the structure, properties, chemical reactions and uses of phenols, aromatic amines and aromatic acids		Factual & Conceptual
CO3	Determine the structure, chemical reactions and analytical constants and significance of oil and fats.	Apply	Factual & Conceptual
CO4	Illustrate the structure, synthesis, chemical reactions and medicinal uses of polynuclear hydrocarbons.	Apply	Factual & Conceptual
CO5	Illustrate the structure, properties, chemical reactions and uses of cycloalkanes.	Apply	Factual & Conceptual

### Mapping of COs with POs

5

Course Code:												×.
BP301T	1	2	3	4	5	6	7	8	9	10	11	1
CO1	3	1	2	2	-	2	1	1	2	1	3	
CO2	3	1	2	2	- 1	2	1	1	2	1	3	
CO3	3	1	2	2		2	1	1	2	1	2	
CO4	3	-1	2	2	-	2	1	1	2	1	3	
CO5	3	1	2	2	-	2	1	1	2		3	-
PO Target	3	1	2	2		2			2		3	
	1		1			4	1	1	4	1	3	



### Session- 2022-23 Odd semester

### Program- B. Pharm

Semester-3

Course- Physical Pharmacy- Theory

Course Code- BP302T

Course Instructors- Dr. Kiran Sharma and Ms. Sakshi Garg

## Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After c	ompletion of the course, the student will be able to	Process Level (BL)	(KC)
CO1	Illustrate parameters related to solubility of the drugs.	Apply	Conceptual
CO2	Analyze states of Matter, properties of matter and physicochemical properties of drug molecules	Analyze	Conceptual
CO3	Determine about surface and interfacial phenomenon.	Apply	Conceptual
CO4	Outline complexation and protein binding.	Analyze	Conceptual
	Illustrate about pH, buffers and Isotonic solutions.	Apply	Conceptual & Procedural

## Mapping of COs with POs

Course Code:											
BP302T	1	2	3	4	5	6	7	8	9	10	11
CO1	3	1	2	1	-	-		1		10	11
CO2	2	1	2	1				-	1	-	2
			2	1	•	-	-	1	1	-	2
CO3	3	1	2	2	-	-	-	1	1		
CO4	2	1	2	2					1	-	2
		<u> </u>		2	-		7	1	1		2
C05	3	1	2	1		-		1			
PO Target	3	1	2	1.40				1	1	-	2
Ber			2	1.40	-	1.	-	1	1	-	2

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#### Session- 2022-23 Odd semester

Program- B. Pharm

Course: Pharmaceutical Microbiology- Theory

Course Instructors: Mr. Debaprasad.Ghosh and Dr. Monika Kaurav

### Tagging COs with BLs & KCs

CO No. After con	Statement of Course Outcome pletion of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
СОІ	Illustrate scope and application of pharmaceutical biotechnology.	Apply	Conceptual & Procedural
CO2	Explain various staining and sterilization techniques used in pharmaceutical biotechnology	Analyze	Conceptual & Procedural
CO3	Outline evaluation methods of antiseptics, disinfectants, and the sterility testing as per different pharmacopoeias.	Analyze	Conceptual & Procedural
CO4	Explore the significance of clean area, methods and standardization microbial assay of biological products.	Analyze	Conceptual & Procedural
CO5	Analyse the prevention of microbial spoilage and preservation of pharmaceutical products & process and applications of cell culture in pharmaceutical research.	Analyze	Conceptual & Procedural

#### CO-PO Mapping (BP303T)

Course Code:	Programme Outcome (PO)											
BP303T	1	2	3	4	5	6	7	8	9	10	11	
СОІ	3	-	-	-	-		-	-	• 1	-	1 .	
CO2	3	-	1	2	-	-	-	-	•	-	1	
CO3	3	-	1	-	-		-			-	2	
CO4	3	-	1	I	1		-	-	•	1	2	
COS	3	-	1	-	1	-	-	•	-	1.	2	
PO Target	3	-	1	1	1	-	-	-	-	1	1.6	

Signature of CO- Coordinator



Semester: III Course Code: BP303T

### Session- 2022-23 Odd semester

Program- B. Pharm

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Semester- 3

Course- Pharmaceutical Engineering- Theory

Course Code- BP304T

Course Instructors- Mr. Sanjeev Chauhan & Mr. Pankaj Bhatt

### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After o	ompletion of the course, the student will be able to	Process Level (BL)	(KC)
	Understand the basic concepts related to fluid flow and equipment's used in size reduction and size separation in pharmaceutical industry	Understand	Factual, Conceptual,
CO2	<b>Explain</b> process of heat transfer and various equipment's used in evaporation and distillation	Analyze	Conceptual
CO3	Examine various processes and equipment used in drying and mixing.	Apply	Conceptual & Procedural
CO4	Apply filtration and centrifugation for processing of pharmaceutical products.	Apply	Conceptual
CO5	Explore selection of different material for pharmaceutical plant construction, corrosion and its prevention	Analyze	Conceptual & Procedural
			the second se

Mapping of COs with POs

Course Code:											
BP304T	1	2	3	4	5	6	7	8	9	10	11
C01	3	1	1	-	-	1		-	ń.	1	1
CO2	3	1	1	-	-	1	-	-	_	1	1
CO3	3	1	1	1	-	1	-	. 21			1
CO4	3	1	1	1	-	1	-	_	_		1
CO5	3	1	1	1	-	1					1
PO Target	3	1	1	1	-	1	-		-		1
								14		<b>1</b>	1





### Session- 2022-23 Odd semester

Program: B. Pharm

Semester: III

Course: Pharmaceutical Organic Chemistry-II- Practical

Course Code: BP305P

### **Course Instructors:**

Dr. Vaishali M. Patil, Dr. Garima Kapoor and Ms. Pragati Gupta

### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After co	mpletion of the course, the student will be able to	Process Level (BL)	(KC)
COI	Demonstrate the purification of organic compounds.	Apply	Conceptual & Procedural
CO2	Illustrate the synthesis of some organic compounds like benzanilide, acetanilide, phenyl benzoate, 2,4,6- tribromo aniline etc.	Apply	Conceptual & Procedural
CO3	Determine acid value, saponification value of oil and fats.	Apply	Conceptual & Procedural

Mapping of COs with POs

Course Code:							•				
BP305P	1	2	3	4	5	6	7	8	9	10	11
CO1	3	1	3	3	-	· -	-	-	1	1	3
CO2	3	1	3	3	-	-	-	-	1	1	3
CO3	3	1	3	3	-	-		-	1	1	3
PO Target	3	1	3	. 3	-	-		-	1	1	3



## Session- 2022-23 Odd semester

Program- B. Pharm

Semester- 3

Course- Physical Pharmaceutics-I- Practical Course Instructors: Prof.(Dr.) N.G. Raghavendra Rao, Dr. Kiran Sharma, and Ms. Sakshi

### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
~~~	inpletion of the course, the student will be able to		
COI	Asses the solubility of the drug at room temperature and % composition of NaCl in a solution using the phenol- water system by CST method.	Evaluate	Conceptual Procedural
CO2	<b>Determine</b> the partition co-efficient and Freundlich- Langmuir constants using activated charcoal & the stability constant of PABA-Caffeine complex	Apply	Conceptual Procedural
CO3	<b>Evaluate</b> the surface tension of given liquids by different methods. HLB number of a surfactant by saponification method and CMC of surfactants.	Evaluate	Conceptual Procedural
CO4	Measure the pKa value of a drug by Half Neutralization/ Henderson-Hasselbalch equation (Experiments related to pH).	Evaluate	Conceptual Procedural

#### Mapping of COs with POs

Course Code: BP306P	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11
CO-1	3	2	2	2	-	1	1	-	-	1	2
CO-2	3	2	2	2	-	1	1	-		1	2
CO-3	3	2	2	2	-	1	1	-	-	1	2
CO-4	3	2	2	2	-	1	1	-	• -	1	2.
PO Target	3	2	2	2	-	1	1		-	1	2

Signature of CO- Coordinator



### Session- 2022-23 Odd semester

### Program- B. Pharm

## Semester: III

Course: Pharmaceutical Microbiology-Practical

Course Code: BP-307P

Course Instructors: Mr. Harsh Rastogi and Dr. Monika Kaurav

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
COI	Apply various techniques and instrument used in microbiology lab	Apply	Conceptual & Procedural
CO2	Apply their theoretical knowledge for the preparation of different type of culture media	Apply	Conceptual & Procedural
CO3	<b>Identify</b> the type of bacteria by different staining techniques.	Analyze .	Conceptual & Procedural
CO4	<b>Determine</b> sterility testing of different pharmaceutical products	Apply	Conceptual & Procedural

Course code:	Program	Programme Outcome (PO)											
5071	1	• 2	3	4	5	6	7	8	9	10	11		
COI	3	2	2	1		-	1	1	-	1	1		
CO2	3	2	3	2	-	-	1	1	• 1	1	1		
СОЗ	3	1	3	2	•	-	1	1	•	1	1		
CO4	3	2	3	2	-	-	١	1	•	1	1		
PO Target	3	1.75	2.75	1.75	μ.	-	1	L.	-	1	1		

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### Session- 2022-23 Odd semester

### Program- B. Pharm

Semester- 3

Course- Pharmaceutical Engineering- Practical

Course Code- BP308P

Course Instructors- Mr. Sanjcev Chauhan, Ms. Surbhi Kamboj

## Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After co	mpletion of the course, the student will be able to	Process Level (BL)	(KČ)
CO1	<b>Demonstrate</b> the process & factors affecting filtration and centrifugation.	Apply	Conceptual & Procedural
CO2	<b>Demonstrate</b> the process & principles of drying and evaporation.	Apply	Conceptual & Procedural
CO3	Handle various pharmaceutical equipment's like FBD, fluid energy mill, Ball mill, Colloidal mill, planetary mixer & Freeze dryer.	Apply	Conceptual & Procedural
CO4	<b>Demonstrate</b> the process and principles of crystallization and distillation	Apply	Conceptual & Procedural

### Mapping of COs with POs

Course Code:	1										
BP308P	1	2	3	4	5	6	7	8	9	10	11
CO1	2	1	1		-	2		-	1	-	-
CO2	2	1	1	-	-	2	-	-	1	1. 	-
CO3	2	1	1	-	-	2	-	-	1		-
CO4	1	1	1	-	-	2	-		1	-	- **
PO Target	1.75	1	1	-	-	2		-	1	-	-





## Session- 2022-23 Odd semester

### Program- B. Pharm

Semester- 3

Course- Universal Human Values and Professional Ethics- Theory Course Code- KVE301

Course Instructors- Dr. Daksh Bhatia and Mr. Praveen Kumar Dixit

## Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category (KC)
After co	ompletion of the course, the student will be able to	Level (BL)	(RC)
CO1	<b>Discuss</b> the need, basic guidelines, content and process for Value Education under the light of 'universal	Understand	Conceptual & Factual
CO2	<b>Explore</b> the concept of harmony in the human being (in Muself) being (1' & 'body' as separate entity.	Apply	Conceptual & Factual
CO3	<b>Ensure</b> the concept 'harmony' in the family and society keeping family as part of undivided society.	Analyze	Conceptual & Factual
CO4	Appraise harmony in the nature and existence imbibing the role of individuals in maintaining the	Evaluate	Conceptual & Factual
CO5	<b>Interpret</b> the holistic approach of harmony in relation with Professional Ethics.	Evaluate	Conceptual & Factual

## Mapping of COs with POs

1	2	3	4	5	6	7	8	9	10	11
12				3	1	3		1	ia.	2
				3	1	3		1	1. set	2
				3	2	3		2		2
			1	3	2	3		3	3	2
				3	3	3		3	3	2
				3	1.8	3		2	3	2
	1	1 2			1  2  3  4  5	1  2  3  4  5  6	1  2  3  4  5  6  7	1  2  3  4  5  6  7  8 <t< td=""><td>1  2  3  4  5  6  7  8  9            1            1            1                                                                       </td></t<> <td>1  2  3  4  5  6  7  8  9  10                                                                                                    .</td>	1  2  3  4  5  6  7  8  9            1            1            1	1  2  3  4  5  6  7  8  9  10                                                                                                    .

Signature of CO- Coordinator: Mr. Praveen Kumar Dixit



### Program- B. Pharm

### Semester- 3

Course- Drug Regulatory Affairs

Course Code- Not Available

Course Instructors- Dr. Vinay Kumar

## Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After co	mpletion of the course, the student will be able to	Process Level (BL)	(KC)
CO1	<b>Understand</b> the basics and introduction of drug regulatory affairs and various drug regulatory agencies.	Understand	Conceptual
CO2	<b>Understand</b> basic requirements of the dossier preparation and general guidance on the submissions to different regulatory authorities.	Understand	Conceptual and Procedural
CO3	<b>Understand</b> the basic regulatory documentation: viz. Active Substance Master File, Types of Drug Master File, etc.	Understand	Conceptual
CO4	Acquire detailed knowledge of ICH guidelines and IPR.	Apply	Conceptual

### Mapping of COs with Pos

Course Code:	Programme Outcome (PO)											
	1	2	3	4	5	6 ·	7	8	9	10	11	
CO1	3	-	-	-	-	2	-	2	1		2	
CO2	3	-	-	-	•	2	-	2	1	-	2	
CO3	3	-	-	-	-	2	-	2	1		2	
CO4	3	-	-		-	2	-	2	.1 -	-	2	
PO Target	3	<i>t</i>	-	- 1	-	2		2	1	-	2	



Signature of CO- Coordinator\_

Digitally signed by Vinay Kumar Date: 2022.09.14 11.02.34 +05'30'

### Academic Session 2022-2023 (Odd semester)

### Program: B. Pharm

### Semester: V

Course: Medicinal Chemistry- Theory

### Course Code: BP501T

Course Instructors: Dr. Vaishali M Patil & Dr. Neha Rana

### Tagging COs with BLs & KCs

CO No. After co	Statement of Course Outcome ompletion of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	<b>Demonstrate</b> the classification, mechanism of action and SAR of Antihistaminic agents & PPIs.	Apply	Factual & Conceptual
CO2	Illustrate classification, mechanism of action and SAR of Antineoplastic agents.	Apply	Factual & Conceptual
CO3	<b>Demonstrate</b> the classification, mechanism of action and SAR of different categories of cardiovascular agents.	Apply	Factual & Conceptual
CO4	Illustrate classification, mechanism of action and SAR of various categories of drugs associated with endocrine system.	Apply	Factual & Conceptual
CO5	Demonstrate the classification, mechanism of action and SAR of anti-diabetic agents and local anesthetics.	Apply	Factual & Conceptual

### Mapping of COs with POs

CO		Programme Outcome (PO)										
PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	
CO1	3	1	1	1	12-	2	1	1	2	1	1	
CO2	3	1	1	1	-	2	1	1	2	1	1	- 1
CO3	3	1 ·	1	1	-	2	1	1	2	1	1	
CO4	3	1	1	1		2	1	1	2	1	1	
CO5	3	1	1	1	-	2	1	1	2	1	1	13
PO Target	3	1	1	1	-	2	1	1	2	1	1	21

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### Session- 2022-23 Odd semester

#### Program- B. Pharm

Semester- 5

Course- Industrial Pharmacy-I

Course Code- BP502T

Course Instructors- Dr. Lakshmi and Mr. Surbhi Kamboj

## Tagging COs with BLs & KCs

CO No	. Statement of Course Outcome ompletion of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
COI	Understand preformulation studies and various solid, semisolid and parenteral dosage forms.	Understand	Factual, Conceptual, Procedural
CO2	Apply preformulation and BCS considerations in the development of solid, liquid oral and parenteral dosage	Apply	Conceptual, Procedural
CO3	Formulate and prepare drug products such as tablets, coated tablet, liquid oral, capsules, pellets, parenteral, ophthalmic products, cosmetics, aerosols, ophthalmic	Create	Conceptual, Procedural
CO4	Assess the quality of prepared drug products such as tablets, coated tablet, liquid oral, capsules, pellets, parenteral,	Evaluate	Conceptual, Procedural
CO5	Investigate various compression and processing problems related to manufacture of tablets, coated tablets, capsules.	Analyze	Conceptual, Procedural

### Mapping of COs with POs

Course Code:					4						
BP502T	1	2	3	4	5	6	7	8	9	10	11
· CO1	3	-	-	-	-	-	-	-		-	-
C02	3	-	3	1	-	-	-	1	1	1 - 1	1.
	3	-	3	-	1	-	1	1	1	1	1
<u> </u>	3	-	3	3	1	-	1-9	1	1	-	1
CO4	2		3			-	-	1	1	-	1.
CO5	5			2					1	1	1
PO Target	3	-	3	2	1						

Signature of CO- Coordinator\_

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#### Session- 2022-23 Odd semester

COs with BLs & KCs

Program- B. Pharm

Course- Pharmacology-II- Theory

Semester- 5

Course Code- BP503T

Course Instructors- Dr. Abhishek Kumar and Mrs. Sheena Mehta

#### Bloom's CO Knowledge **Statement of Course Outcome** Cognitive No. Category Process (KC) Level (BL) After completion of the course, the student will be able to Factual & Evaluate Determine the pharmacology of drugs used for COI Conceptual management of cardiovascular disorders. Factual & Analyze Illustrate the pharmacology of drugs acting on urinary CO2 Conceptual system Factual & Analyze Examine the pharmacological and physiological roles CO3 Conceptual of autacoids and drugs acting on their receptors Factual & Evaluate Determine the pharmacology of drugs acting on CO4 Conceptual endocrine system Conceptual & Apply Illustrate bioassay of specific drugs CO5 Procedural

#### CO - PO Matrix

Course Code:	Programme Outcome (PO)												
BP503T	1	2	3	4	5	6	7	8	9	10	11		
C01	3	-	1	-	-	-	-	-	-	-	3		
CO2	3	-	1	-	-	-	-		-	-	3		
CO3	3	-	1	-	-	-	-	-	-	-	3		
CO4	3	-	1	-	-	-	-	-	-	· -	3		
C05	3	1	2		-	•	-			-	3		
PO Target	3	1	1.2	-	- 2	-			-	-	3		

**CO-Cooardinator** (Dr. Abhishek Kumar)

( Mry, Sheena Mehta)



### Session- 2022-23 Odd semester

### Program- B. Pharm

Semester- 5

Course- Pharmacognosy & Phytochemistry-II- Theory

Course Instructors-Dr. Daksh Bhatia and Dr. Richa Goel

#### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After	completion of the course, the student will be able to	Level (BL)	(KC)
COI	Understand the concepts of metabolic pathways in higher plants.	Understand	Factual & Conceptual
CO2	Acquire the knowledge of the chemistry, source, therapeutic uses and commercial applications of specific crude drugs.	Apply	Factual & Conceptual
CO3	Analyze the specified phytoconstituents utilizing the standardized parameters	Analyze	Conceptual & Procedural
CO4	Understand the industrial applications of the mentioned phytoconstituents	Understand	Factual & Conceptual
CO5	<b>Compare</b> various methods for extraction, isolation and purification of phytoconstituents.	Evaluate	Conceptual & Procedural

#### Mapping of COs with POs

Course Code:				Prog	ramm	e Out	come	(PO)	1		1
BP504T	· 1	2	3	4	5	6	7	8	9	10	11
CO1	3	-	-	1	-	-	-	-	-	-	2
CO2	3	··· -	2	-	-	-	-	-	-	-	2
CO3	3	-	2	3	-	-		-	-	-	2
CO4	3	-	2	1	-	-	-	-	-	-	2
CO5	3	1	2	3	-	-	-	-	-	-	2
PO Target	3	1	R	2	-	-	-	-	 -	- ,	2
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Signature of CO- Coordinator

Course Code- BP504T

#### Session- 2022-23 Odd semester

Program- B. Pharm Semester: III

Course: Pharmaceutical Jurisprudence- Theory Course Instructors: Mr. Harsh Rastogi and Dr. Monika Kaurav

Course Code: BP505T

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## Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
COI	<b>Demonstrate</b> the rules and regulations defined under the Drugs and Cosmetics act 1945.	Apply	Factual & Conceptual
CO2	Illustrate the regulation by Pharmacy Act 1948, Medicinal and Toilet Preparations Act and Narcotic Drugs and Psychotropic Substances Act.	Apply	Factual & Conceptual
CO3	<b>Demonstrate</b> the guidelines laid under the acts pertaining to prevention of cruelty to animals and national pricing authority.	Apply	Factual & Conceptual
CO4	<b>Illustrate</b> the basics of pharmaceutical legislations and code of pharmaceutical ethics.	Apply	Factual & Conceptual
CO5	<b>Demonstrate</b> the medical termination of pregnancy act, RTI act and IPR.	Apply	Factual & Conceptual

### Mapping of COs with POs (BP505T)

Course Code:	Program	Programme Outcome (PO)												
BP505T	1	2	3	4	5	6	7	8	9	10	11			
СОІ	1	-	1	-	1	2	3	1	1	-	2			
CO2	1	-	1	-	1	2	3	1	2	-	2			
CO3 .	1	-	1	-	1	2	3	1	1	-	2			
CO4	1	-	1		1	2	3	1	2	-	2			
CO5	1	-	1		1	2	3	1	1	-	2			
PO Target	1		1	-	1	2	3	1	1.4	-	2			

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### Session- 2022-23 Odd semester

## Program- B. Pharm

Semester- 5

Course- Industrial Pharmacy-I (Practical)

#### Course Code- BP506P

Course Instructors- Mr. Harsh Rastogi, Dr. Lakshmi, Dr. Ashu Mittal, Ms. Surbhi Kamboj

## Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After co	mpletion of the course, the student will be able to	Process Level (BL)	(KC)
CO1 .	Determine various physicochemical parameters of drugs to perform preformulation studies	Evaluate	Conceptual,
CO2	Prepare various dosage forms such as tablets, capsules, injections, eve ointments, eve drong and	Create	Conceptual,
CO3	Evaluate tablets and capsules on various parameters	Evaluate	Procedural Conceptual,
CO4	Formulate coated tablets/granules	Create	Procedural Conceptual, Procedural

## Mapping of COs with POs

Course Code:				I	Program	nme ou	tcome	S			
'BP506P	1	2	3	4	5	6	7	8	9	10	11
CO1	3	2	2	1	-	-	1	1		1	1
CO2	3	2	3	<u>, 1</u>	-	- 1	1	1	- 10	1	1
CO3	3	1	3	- 1	- 1		1	1	-	. 1	1
CO4	3	2	3	1	-	-	1	1	-	1	
PO Target	3	1.75	2.75	1		-	1	1	-	1	1

Signature of CO- Coordinator Current



### COs with BLs & KCs

Faculty Name: Dr. Abhishek Kumar; Mr Kapil Sachan; Dr. Vinay Kumar

Class: B.Pharm V Sem Practical

## Subject: Pharmacology-II Practical (BP507P)

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After co	mpletion of the course, the student will be able to	Process Level (BL)	(KČ)
CO1	<b>Determine</b> the effect of drugs on isolated preparation of animal tissues through simulation software	Apply	Conceptual & Procedural
CO2	<b>Illustrate</b> the pharmacological activity of drugs on animal models through simulation software	Analyze	Conceptual & Procedural
CO3	<b>Determine</b> the effect of drugs on dose-response curve of agents on isolated preparation of animal tissues through simulation software	Apply	Conceptual & Procedural
CO4	<b>Demonstrate</b> the bioassay techniques for effect of drugs on animal preparations through simulation software	Apply	Conceptual & Procedural

### CO - PO Matrix

Course Code: BP507P	Programme Outcome (PO)										
D1 50/1	1	2	3	4	5	6	7	8	9	10	11
C01	3	3	2 -	2	-	-	-	-	1	-	3
CO2	3	3	2	2	-	-	-	-	1	-	3
CO3	3	3	2	2	-	-	-	- " ,	1		3
CO4	3	3	2	2	-	-	-	-	1	-	3
PO Target	3	3	2	2	-	-	-	-	1	· -	3

(Signature) CO Coordinator (Dr. Abhishek Kumar)

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#### Session- 2022-23 Odd semester

Program- B. Pharm

Semester- 5

Course- Pharmacognosy & Phytochemistry-II- Practical

Course Code- BP508P

Course Instructors- Dr. Daksh Bhatia and Dr. Richa Coel and Pro. Pragate Cupta

## Tagging COs with BLs & KCs

CO No. After	Statement of Course Outcome completion of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	Acquire the knowledge of the morphology and microscopy of crude drugs	Apply	Conceptual & Procedural
CO2	<b>Compare</b> various methods for extraction and isolation	Evaluate	Conceptual & Procedural
CO3	Analyze the specified phytoconstituents utilizing the standardized parameters	Analyze	Conceptual & Procedural

## Mapping of COs with POs

Course Code:	Programme Outcome (PO)											
BP508P	1	2	3	4	5	6	7	8	9	10	11	
CO1	3	, <del>.</del>	-	2	-	2	- 1	-		-	2	
CO2	3	2	2	2	-	2	-		-	-	2	
CO3	3	2	2	2	-	2	-	-	-	( <b>1</b> - 1	2	
PO Target	3	2	2	2	-	2	-	-	-	-	2	

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### Session- 2022-23 Odd semester

Program- B. Pharm

Semester- 5

Course- Herbal Product Development

Course Code-VA510

Course Instructors-Dr. Deepti Katiyar and Ms. Pragati

### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category
After	completion of the course, the student will be able to	Level (BL)	(KC)
COI	Understand the concepts of Phytochemical Screening, Extraction and Isolation	Understand	Factual & Conceptual
CO2	Analyze the parameters for the standardization of crude drugs and herbal products	Analyze	Conceptual & Procedural
CO3	Understand the screening models for biological activities of natural products	Understand	Factual & Conceptual
CO4	Understand the concepts for developing herbal formulations, herbal cosmetics and nutraceuticals and their packaging strategies	Understand	Factual & Conceptual
CO5	Evaluate the herbal products for their pharmaceutical stability	Evaluate	Conceptual & Procedural

### Mapping of COs with POs

Course Code:		Programme Outcome (PO)									
VA510	1	2	3	4	5	6	7	8	9	10	П
COI	3	-	-	-	-	-	-	-	-	-	2
CO2	3	1	2	3	-	-	2	1	-	-	2
CO3	3		-	3	-	-	-	-	-	-	2
CO4	3	-	-	-	-	-	-	-	-	-	2
CO5	3	1	2	3	-	-	2	1	-	-	2
PO Target	3	1	2	3	-	-	2	1	-	-	2

Signature of CO- Coordinator



### Session- 2022-23 Odd semester

### Program- B. Pharm

Semester-7

Course- Instrumental Method of Analysis- Theory

Course Code- BP701T

Course Instructors- Dr. K. Nagarajan/ Dr. Garima and Ms. Shipra Singhal

## Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category (KC)
After c	completion of the course, the student will be able to	Level (BL)	(NC)
COl	Illustrate the basics and concepts of UV Visible spectroscopy, Fluorimetry and its applications.	Analyze	Conceptual
CO2	Apply the basics and concepts of IR spectroscopy, flame photometry, atomic absorption spectroscopy, Narheleturbidometry	Analyze	Conceptual
CO3	<b>Demonstrate</b> the basics and concepts of chromatography, TLC, paper chromatography, Electrophoresis.	Apply	Conceptual & Procedural
CO4	Illustrate the basics and concepts of Gas chromatography and High-performance	Analyze	Conceptual & Procedural
COS	5 Understand the basics and concepts of Ion exchange chromatography, Gel chromatography and Affinity chromatography.	Understand	Conceptual

## Mapping of COs with POs

Course Code:											
BP701T	1	2	3	4	5	6	7	8	9	10	11
DI 7011	3	-	2	3	-	2	1	· 1	2	-	3
01	2	-	2	3	-	2	1	1	2	2	3
CO2	3	-	2	2		2	. 1	-	2	-	3
CO3	3		2	5	-	2		1	2	2	3
CO4	3		2	3		2	1		2	2	
CO5	3	-	2	3		2	1			-	3
PO Target	3	-	2	3	-	2	1	1	2	2	3

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### Session- 2022-23 Odd semester

Program- B. Pharm

Semester- 7

Course- Industrial Pharmacy II - Theory

Course Code- BP702T

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Course Instructors-Ms. Vidhu Saxena and Mr. Anuj Pathak

## Tagging COs with BLs & KCs

CO No. After co	Statement of Course Outcome mpletion of the course, the student will be able to	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	Explainpilot plant scale up techniques.	Understand (BL-2)	Conceptual, Factual and Procedural
CO2	Categorizevarious guidelines for technology transfer	Analyze (BL-4)	Conceptual, Factual and
CO3	-Assessregulatory affairs in context with regulatory framework of Pharma Industry	Evaluate (BL-5)	Conceptual, Factual and Procedural
CO4	Outlinedifferent aspects of Quality Management System	Analyze (BL-4)	Conceptual, Factual and Procedural
CO5	ExamineIndian Regulatory Requirements	Apply (BL-3)	Conceptual and Factual

### Mapping of COs with POs

Course Code:										1.5	
BP702T	1	2	3	4	5	6	7	8	9	10	11
CO1	3	-	1	-	-	-	-	-	-	-	3
CO2	3	-	3	-	-	-	-	-	-	-	3
CO3	3	-	1	-	-	3	-	- 1	-	-	3
CO4	3	-	3	-	-	2	-	-	-	-	3
CO5	3	-	1	-	-	- 1	-	-	-	-	3
PO Target	3	-	1.8	-	-	2	-	-	-	-	3

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### Signature of CO- Coordinator

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## KIET GROUP OF INSTITUTIONS, DELHI-NCR, GHAZIABAD

### Session 2022-2023 Odd Semester

gram- B.Pharm.

Semester-VII

urse Pharmacy Practice - Theory

Course Code - BP703T

urse Instructor - Dr Shardendu Kumar Mishra and Mrs. Priya Bansal

#### Tagging COs with BLs and KCs

No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KCs)
1884 <sup>(</sup>	~After completion of the cours	se, the student will be ab	le to:
COI	Acquire the concept of hospital organization, drug stores and role of pharmacist in hospital.	Apply	Factual & Conceptual
CO2	<b>Explore</b> the drug distribution system in hospital, hospital formulary, therapeutic drug monitoring and medical adherence.	Apply	Factual & Conceptual
CO3	<b>Illustrate</b> the pharmacy and therapeutic committee to maintain the drug safety and medication error.	Apply	Factual & Conceptual
C04	<b>Illustrate</b> the implementation of budget in pharmacy and rational use of OTC medications.	Apply	Factual & Conceptual
C05	Explore various estimation of blood compositions and urine in clinical set-up	Apply	Conceptual & Procedural

### Mapping of COs with POs

Course Outcome BP703T	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3		1			3		6) ·	1		1.
CO2	3			1	-	3	1		1		1
CO3	3	1			-	2			1		1
CO4	3	+				3			2	-	1
C05	3			1		3			2		1
PO Target	3					2.8			1.4		1

Signature of CO Coordinator Anglyon Be Shardude lermon

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### Session- 2022-23 ODD semester

### Program: B. Pharm

### Semester: 7

Course: Novel Drug Delivery Systems

## Course Code: BP704T

Course Instructors: Prof. (Dr). N. G. Raghavendra Rao and Dr. Lakshmi

### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	Understand basic concepts related to various Novel	Understand	Factual,
	drug delivery systems.	л. К	Procedural
CO2	Analyze various novel drug delivery systems.	Analyze	Conceptual, Procedural
CO3	<b>Examine</b> various approaches for development of	Apply	Conceptual, Procedural
CO4	Apply different methods for development of novel	Apply	Conceptual, Procedural
CO5	Apply Novel drug delivery systems for various medical conditions.	Apply	Conceptual, Procedural

## Mapping of COs with POs

Course Code:										<u> </u>	
BP704T	1	2	3	4	5	6	7	8	9	10	11
CO1	3	2	1	1	-	-	-	-	1	-	1
CO2	3	2	1	-	-	-	-	-	1	-	1
CO3	3	3	2	1	1	-	-	-	- 1	-	1
CO4	3	- 3	3	1		-	-	-	1	2	1
C05	3	3	2	1	-	-	-	-	2	1 "	1`
PO Target	3	2.6	1.8	1	1	-		-	1.2	1.5	1

Signature of CO- Coordinator\_ Routeshim\_



#### Session- 2022-23 Odd semester

### Program- B. Pharm

Semester- 7

Course- Instrumental Methods of Analysis (Practical)

Course Code- BP705P

Course Instructors- Dr. Garima Kapoor and Ms. Shipra Singhal

Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After o	completion of the course, the student will be able to	Level (BL)	(KC)
CO1	Analyze the graphs of absorption maxima and effect of solvents in different organic compounds.	Analyze	Conceptual & procedural
CO2	Evaluate different organic compounds using colorimetry, fluorimetry and UV spectroscopy.	Evaluate	Conceptual & procedural
CO3	Demonstrate the working of HPLC, Gas chromatography and flame photometry.	Analyze	Conceptual & procedural
CO4	Illustrate the process of separation of various compounds using different chromatographic techniques.	Analyze	Conceptual & procedural

### Mapping of COs with POs

Course Code:											
BP705P	1	2	3	4	5	6	7	8	9	10	11
C01	3	- 1	1	3	1	2	•	2	-	-	1
CO2	3	1	1	3	1	2	•	2	-	-	1
CO3	3	1	1	3	1	2	-	2	-		1
CO4	3	1	1	3	1	2	-	2			1
PO Target	3	1	1	3	1	2	-	2	-	-	1

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## Session- 2022-23 Odd semester

## Program- B. Pharm

Course- Practice School

Semester- 7

Course Code- BP706PS

Course Instructors- Dr. K. Nagarajan, Dr. Daksh Bhatia, Dr. Vaishali M. Patil, Mr. Anuj Pathak, Mr. Sanjeev Chauhan, Mr. Surya Prakash, Mr. Debaprasad Ghosh, Ms. Vidhu Saxena, Dr. Lakshmi, Dr. Garima Kapoor, Ms. Shipra Singhal, Mr. Pankaj Bhatt, Ms. Sakshi Garg, Dr. Shardendu Kumar Mishra, Ms. Dr. Neha, Mr. Balwan,

### Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category (KC)
After co	mpletion of the course, the student will be able to	Level (BL)	(IC)
CO1	Understand the rationale behind undergoing the practice school in a specific thrust area of pharmacy.	Understand	Factual & Conceptual
CO2	Acquire expertise in data mining, reviewing, and processing for a particular thrust area.	Apply	Conceptual & Procedural
CO3	Analyze the implementation of available technology or development of new strategies to cater the needs under	Analyze	Conceptual & Procedural
CO4	Evaluate the potential role of new findings and their	Evaluate	Conceptual & Procedural
CO5	Create modern pharmaceuticals or alternate therapeutic systems or new analytical method or any other labeled	Create	Conceptual & Procedural

Mapping of COs with POs

Course Code:											4.1
RP303T	1	2	3	4	5	6	7	8	9	10	11
	3	2	2	-	-	1	1	-	1		2
		2	2	1	-	1	1		1		2
CO2	3	2	2	3		1	1	-	1	-	2
CO3	3	2	2	2		1	1		1		2
CO4	3	2	2	2	-	1	1		1	-	2
CO5	3	2	2	2	-						-
PO Target	3	2	2	2	-			-		-	1
Signature of CO-	Coord	linator		N Se	rutiniz	ed by			A N	pprov	éd by

Drohas Mr. D.P. Choch

Mr. D.P. Ghosh

h Bhatia

Prof. (Dr.) K. Nagrajan

## KIET School of Pharmacy, KIET Group of Institutions

Program		<u>CO State</u>	ements a	and CO	<u>- PO M</u>	apping	
Course		B. Pharm.				Year	1
Course-	Human A	natomy and Physiology II - The	ory I-yr	Code	BP201T	Semester	2
Course Ins	tructors	Mrs. Priya Bansal	Dr.	Praveen K	Dixit	Course Type-	Theory

CO No.	Statement of Course Outcome		
1	After completion of the course, the student will be able to	BL	кс
C01	Outline the anatomy and physiology of the Nervous system.	Analyze	Factual & Conceptual
CO2	Illustrate anatomy and physiology of Digestive System and energetics (ATP, Creatinine Phosphate).	Apply	Factual & Conceptual
CO3	Explore the structure and functions of Respiratory System and Urinary System.	Analyze	Factual & Conceptual
CO4	Demonstrate the anatomical and physiological aspects of the Endocrine System.	Apply	Factual & Conceptual
C05	Explain the structural and functional aspects of Reproductive System and Genetics.	Analyze	Factual & Conceptua

Mapping	of COs	with POs							1 E.		
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3					1	84 - A	1	2		2
CO2	3	-			•	1		1	2	1 21 100	2
CO3	3					1		1	2		2
CO4	3		<sup>а</sup> нн н			1	a Area	1	2	8 - 19 - 24 8 - 19 - 24	2
C05	3	1.1				1	a Xira	1	2		2
CO6	e					1 1	A. L.			_	
PO Target	3.00	#DIV/01	#DIV/01	#DIV/01	#DIV/01	1.00	#DIV/01	1.00	2.00	#DIV/01	2.00

Signature of Course Instructor (s):

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OBE- 2022-23e

#### KIET School of Pharmacy, KIET Group of Institutions CO Statements and CO- PO Mapping

Course Instructors-	<b>j-</b>	Dr.Neha Rana	м	s, Shipra Si	nghal	Course Type-	Theory
Course-	Pharma	ceutical Organic Chemistry I- T	heory I-yr	Code	BP202T	Semester	2
Program-	_	B. Pharm	Year	1			
- market		COBIA					

21			
CO No.	Statement of Course Outcome	BL	кс
	After completion of the course, the student will be able to		
C01	Determine Classification, Nomenclature and Isomerism of Organic Compounds.	Apply	Factual & Conceptual
CO2	Apply mechanism of action of alkanes, alkenes and conjugated dienes addition reactions.	Apply	Factual & Conceptual
CO3	Examine the basics of stereochemistry, kinetics, reactivity order and uses of important alkyl halides and alcohols.	Apply	Factual & Conceptual
CO4	Illustrate the mechanism involved in name reactions and identification tests of carbonyl compounds.	Apply	Factual & Conceptual
CO5	Examine the chemistry and uses of carboxylic acids and amines.	Apply	Factual & Conceptual

Mapping	of COs wi	ith POs					4				
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3	1	1	1		1	1		1		1
CO2	3		1	1		1	1		1	_	1
CO3	3		1	1		1	1		1	1	1
CO4	3		- 1	1		1	1		1	1	1
C05	3		1	1		1	1	10.	1		1
PO Target	3.00	1.00	1.00	1.00	#DIV/01	1.00	1.00	#DIV/01	1.00	1.00	1.00

Signature of Course Instructor (s):

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### KIET School of Pharmacy, KIET Group of Institutions CO Statements and CO- PO Mapping

Course- Blocharder T	Course Ins	tructors	Diotnemistry - Theory I-yr	Code BP20			Semester	2	
I Program-1	Program- Course-		B. Pharm	•			Year	1	2

CO No.	Statement of Course Outcome	BI	КС
	After completion of the course, the student will be able to	DL	AC
C01	Apply the knowledge of the concept of biomolecules and bioenergetics	Apply	Factual,Con ceptual
CO2	Explore the knowledge of carbohydrate metabolism and biological oxidation and underlying diseases.	Apply	Factual,Con ceptual
CO3	Analyze the concepts of lipid and amino acid metabolism and their rolein various diseases.	Analyze	Factual,Con ceptual
CO4	Illustrate the concept of nucleic acid metabolism and transfer of genetic information.	Analyze	Factual,Con ceptual
C05	Classify various types of enzymes and their role as diagnostic and the rapeutic applications	Analyze	Factual,Con ceptual

Mapping	of COs w	ith POs									
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
CO1	3	2	2	- 1	-	1	3 1 .	1	1	1	2
CO2	3	3	2	1	-	1	1	1	2	1	1
CO3	• 3	3	2	1	•.	1	1	1	2	1	1
CO4	3	3	3	2	-	2	1	1	2	1	2
C05	3	1	1	1	-	1	1	1	1	1	
PO	2.00	2.40	2.00	1.20						· ·	
Target	5.00	2.40	2.00	1.20	•	1,20	1.00	1.00	1.60	1.00	1.40

Signature of Course Instructor (s):

Pragati Gupta Neha Rana



### KIET School of Pharmacy, KIET Group of Institutions CO Statements and CO- PO Mapping

Program-	B. Pharm.	÷.,			Year	1
Course	Pathophysiology - Theory I-yr		Code	BP204T	Semester	2
Course Instructors	Mr.Himanshu Aggarwal	Mr.Pr	aveen Kum	nar Dixit	Course Type-	Theory

CO No.	Statement of Course Outcome		
	After completion of the course, the student will be able to	BL	КС
C01	Understand the basic mechanisms involved in the process of cell injury and inflammation	Understand	Factual & Conceptual
CO2	Summarize the pathological mechanisms involved in the development of cardiovascular, renal and respiratory systems.	Understand	Factual & Conceptual
CO3	Review the mechanisms of development of diseases associated with blood, endocrine, nervous and gastrointestinal system	Understand	Factual & Conceptual
CO4	Understand the development and progression of inflammatory diseases along with cancer.	Understand	Factual & Conceptual
C05	Summarize the etiology and pathogenesis of infectious and sexually transmitted diseases.	Understand	Factual & Conceptual

Mapping	of COs w	ith POs									A 14
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3	1	2	1		2	1	1	2	1010	1011
CO2	3	1	2	1 .		2	1		3		3
CO3	3	1	2	1		2		1	3	1.2	3
. CO4	3	1	· 2	1		2	. 1	1	3		3
CO5	3	1	-			2	1	1	3	1	3
PO		<u> </u>	2	-		2	1	1	3	1	3
Target	3.00	1.00	2.00	1.00	#DIV/01	2.00	1.00	1.00	3.00	1.00	

Signature of Course Instructor (s):

Praveen



#### KIET School of Pharmacy, KIET Group of Institutions CO Statements and CO- PO Mapping

Program-		the second s			
Course		B. Pharm		Year	
Course-	BP205	r Computer Applications in	Semester	2	
Course Ins	tructors	Dr. Garima Kapoor	Ms. Sakshi Garg	Course Type-	Theory

CO No.	Statement of Course Outcome		
	After completion of the course, the student will be able to	BL	КС
CO1	Understand the concept of number system and information systems.	Understand	Factual & Conceptual
CO2	Know about various web technologies and databases.	Understand	Factual & Conceptual
CO3	Understand the various types of application of computers in pharmacy.	Understand	Factual & Conceptual
CO4	Understand the objective, concept and impact of Bioinformatics.	Understand	Factual & Conceptual
CO5	Understand the application of computers in data analysis in Preclinical development	Understand	Factual & Conceptual

Mapping	of COs w	ith POs					8				
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	2	3	2	3	1	1	2	1	2	2	3
CO2	2	3	2	3	1	3	1	2	2	3	3
CO3	3	2	2	3	2	3	2	2	3	3	3
CO4	3	2	2	3	1	3	2	1	3	2	3
CO5	3	2	2	3	1	2	3	2	3	3	3
PO Target	2.60	2.40	2.00	3.00	1.20	2.40	2.00	1.60	2.60	2.60	3.00

Signature of Course Instructor (s): Gauna hapoor

**BoS Remarks:** 



а. С		CO State	ements a	nd CC	- PO Ma	apping		
Program-		B. Pharm.	Year	1				
Course-	E	nvironmental Sciences - Theory I	-yr	Code	BP206T	Semester	. 2	
Course In:	structors	MR. HARSH RASTOGI	MR. SA	NJEEV C	HAUHAN	Course Type-	Theory	

## KIET School of Pharmacy, KIET Group of Institutions

CO No.	Statement of Course Outcome	BL	кс
	After completion of the course, the student will be able to	2	
CO1	Understand	Factual	
CO2	Understand the concept of Ecosystem with various types.	Understand	Factual/con ceptual
CO3	Illustrate the environmental pollution: Air pollution; Water pollution; Soil pollution	Remember	conceptual
CO4			
CO5			
CO6			

Mapping	of COs w	ith POs					1	а. <sub>н</sub> . – т. Е.		52	ali in
11 0	PO1	PO2	PO 3	PO 4	PO 5	PO 6	; <b>PO 7</b>	PO 8	PO 9	PO 10	PO 11
CO1	1	1	. 1	1		1	3	1	2	3	3
CO2	1	1 .	1	1	•	1	3	1	2	3	3
CO3	1	2	2	1		2	3	1	2	3	3
CO4							×				
CO5	n le a										1. 1.
CO6											1 1
PO Target	1.00	1.33	1.33	1.00	#DIV/01	1.33	3.00	1.00	2.00	3.00	3.00

Signature of Course Instructor (s): larsh

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		<u>CO Stat</u>	ements	and CO	)- <u>PO M</u>	apping		
Program-		B. Pharm	Year	2				
Course-	Human	Anstomy and Physiology II- Pr	rectical	al Code BP297P		Semester	2	
Course Inst	ructors	Mr.Praveen K.Dixit	м	s.Priya B	ansal	Course Type-	Lab	

## KIET School of Pharmacy, KIET Group of Institutions

CO No.	Statement of Course Outcome	BL	кс	
	52			
C01	Understand the anatomy and physiology of CNS, Digestive system, Respiratory system, urinary system, endocrine system and reproductive system using models and charts.	Understand	Factual & Conceptual	
CO2	Illustrate the practical aspects related to reflex activity, body temperature recording, lung capacities, BMI and their importance.	Apply	Factual & Procedural	
CO3	Understand the different mechanisms of responses related to sense organs and nervous system.	Understand	Factual & Conceptual	

Mapping	of COs w	ith POs				1			_		
	POI	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
COI	3	1	1	2	1			1	2		2
CO2	3	1	1	2	1		1	1	2		2
CO3	3	1	1	2	1			1	2		2
PO Target	3.00	1.00	1.00	2.00	1.00	DIV/01	#DIV/01	1.00	2.00	#DIV/01	2.00

Signature of Course Instructor (s): Proveen


OBE- 2022-23e

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Program-		B. Phar	m.		Year	1	
Course-	Pharma	aceutical Organic Chemistry I	Practical	Code	BP208P	Semester	2
Course Instructors-		Dr. Neha Rana	· N	ls. Shipra Si	nghal	Course Type-	Lab

CO No.	Statement of Course Outcome	BL	кс
	After completion of the course, the student will be able to		
C01	Apply the knowledge of equipment, apparatus and reagents used for qualitative analysis of organic compounds.	Apply	С&Р
CO2	Analyze and identify different organic compounds on the basis of chemical test.	Apply	C &P
CO3	Apply the knowledge to sybnthesize organic compounds and analyze them.	Apply	C &P
CO4	Examine the various mechanism and applications for synthesis of organic compounds.	Apply	C & P

Mapping	of COs w	ith POs			•						20 M
·	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3	3	3	3		2	2	а	2	2	3
CO2	3	3 ·	3	3	10 A.	2	2		2	2	3
CO3	3	3	3	3		3	2		2	3	3
CO4	3	3	3	3		3	2		2	3	3
PO Target	3.00	3.00	3.00	3.00	#DIV/01	2.50	2.00	#DIV/01	2.00	2.50	3.00



OBE- 2022-23e

		CO Staten	ients and CO	-PO M	apping	
Program-		B. Pharm.		Year	1	
Course-		Biochemistry- Practical	Code	BP209P	Semester	. 2
Course Ins	structors	Dr. Neha Rana	-	;	Course Type-	Lab

# KIET School of Pharmacy, KIET Group of Institutions

CO No.	Statement of Course Outcome	BL	кс	
	After completion of the course, the student will be able to			
C01	Analyze different carbohydrates, proteins and abnormal constituents of urine.	Analyze	Procedural & Conceptual	
CO2	Determination of blood creatinine, salivary amylase, blood sugar and scrum total cholesterol.	Analyze	Procedural & Conceptual	
CO3	Quantitative analysis of reducing sugars (DNSA method) and proteins.	Analyze	Procedural & Conceptual	

Mapping o	of COs w	ith POs									i
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3	3	1	1		1	1	- 1	1	1 .	. <b>1</b>
CO2	3	3	2	2	1	1	2	1	2	2	1
C03	3	3	2	2	1	1	2	1	2	2	1
PO Target	3.00	3.00	1.67	1.67	1.00	1.00	1.67	1.00	1.67	1.67	1.00

Note for



Program-	B. Pharm.				Year	1
Course-	Comp	uter Applications in Pharmacy- Practica	Code	BP210P	Semester	2
Course Instructors	-	Dr. Amit Gupta		* = 0	Course Type-	Lab

CO No.	Statement of Course Outcome	BL	КС	
-	After completion of the course, the student will be able to			
C01	Apply the Knowledge of computing fundamentals to pharmaceutical applications for any given requirement.	Apply	F&C	
CO2	Apply efficiently the contemporary IT tools (web technologies and databases) to all pharmaceutical related activities.	Apply	F&C	
CO3	Apply the various application of databases in pharmacy.	Apply	F&C	

Mapping e	of COs w	ith POs									
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
CO1	3	3		2	1		2		el.		2
CO2	2	3	2	2	1		:		2		2
CO3	3	3	2	2	2		2		3		1
PO Target	2.67	3.00	2.00	2.00	1.33	#DIV/01	2.00	#DIV/01	2.50	#DIV/01	1.67

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# KIET School of Pharmacy, KIET Group of Institutions

		<u>CO Stat</u>	ements a	nacu	- PU MA	apping	
Program-		B. Pharm.		Year	2		
Course-	Pharmaco	eutical Organic Chemistry III -TI	heory II-yr	Code	BP401T	Semester	4
Course Ins	structors	Dr. Abhay Bhardwaj	Mr	. Surya Pra	akash	Course Type-	Theory

CO No.	Statement of Course Outcome			
	After completion of the course, the student will be able to	BL	КС	
CO1	Explain the structural features and stereochemistry of chemical compounds.	Understand	Conceptual	
CO2	Infer the nomenclature and structure of chemical compounds.	Understand	Conceptual	
CO3	Explore the basics chemistry nomenclatue and classification of heterocyclic compounds.	Apply	Conceptual	
CO4	Illustrate the synthesis, reactions and medicinal uses of heterocyclic compounds.	Apply	Conceptual, Procedural	
CO5	Demonstrate the reactions and importance of metals.	Apply	Concentral	
CO6			Conceptian	
		1		

	4										
Mapping	of COs w	ith POs	T				:			a	
	PO1	PO2	PO 3	PO 4	PO 5	POG	DOF				
C01	3	- 1	2	3		100	P07	PO 8	PO 9	PO 10	PO 11
CO2	3	1	2	2		2	1	-	2	1	3
CO3	3		2	2	-	2	1	-	2	1	3
<u> </u>		1	3	3	-	2	1	-	3	1	
04	3	1	2	3	-	2	1		2	1	3
C05	3	1	2	3	-	2	1		2	1	3
CO6								· ·	2	1	3
PO	2.00			-	-						
Inrget	3.00	1.00	2.20	2.80	#DIV/01	2.00	1.00				+
								10/0/01	2.20	1.00	300

Program	CO Statements and CO- PO Mapping									
Course -		8. Pharm.		Year	2					
Course	Pharmac	eutical Organic Chemistry I- Pr	rectical	Code	BP401T	Semester	4			
Course Instructors-		SHIPRA SINGHAL		PARLA GRO	VER	Course Type-	Theory			

CO No.	Statement of Course Outcome			
	After completion of the course, the student will be able to	BL	кс	
C01	Understand basics of medicinal chemistry, physicochemical and stereochemical properties in relation to drug design and drug metabolism.	Understand	Factual & Conceptual	
CO2	Understand chemistry of drugs acting on Adrenergic system.	Understand	Factual & Conceptual	
CO3	Understand chemistry of drugs acting on Cholinergic system.	Understand	Factual & Conceptual	
CO4	Illustrate chemistry of drugs acting on CNS such as sedative, hypnotics, antipsychotics and anticonvulsants.	Apply	Factual & Conceptual	
CO5	Illustrate the chemistry of drugs acting on CNS such as General anesthetics, narcotic & non- narcotic analgesics and anti-inflammatory agents.	Apply	Factual & Conceptual	
CO6				

Mapping	of COs wi	th POs							T	T	
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3	1	1			1	2		2		1
CO2	3	1	1			1	2		2		
CO3	3	1	* • <b>1</b> • •			- 1	2		2		3
CO4	3	1	1			1	2		2		
CO5	3	1	1			1	2		2		3
C06											
PO Target	3.00	1.00	1.00	#DIV/01	#DIV/01	1.00	2.00		2.00		

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		<u>CO Staten</u>	ients and CO			
Program-		B. Pharm.	Year	2		
Course-	Phy	sical Pharmaceutics II - Theory II-y	r Code	BP403T	Semester	4
Course Inst	ructors	Mr. Debaprasad Ghosh	Ms. Sakshi (	Garg	Course Type-	Theory

CO No.	Statement of Course Outcome	BL	кс
	After completion of the course, the student will be able to	n.	
C01	Understand the types, general characteristics, and effect of various factors on Colloidal dispersions.	Understand	Procedural
CO2	Identify the rheological behaviour of fluids and the principles of deformation of solids.	Analyze	Procedural
CO3	Analyse the theories, types, various properties, and stability of Coarse dispersions like suspensions and emulsions.	Analyze	Procedural
CO4	Analyze various aspects of micrometrics.	Analyze	Procedural
C05	Analyze the effects of kinetics, degradation factors and common reactions on the stability of drugs including accelerated stability studies and their prevention.	Analyze	Conceptual

Mapping	of COs w	ith POs					9				
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3	2	. 2	2			1	1	1		2
CO2	3	2	2	3			. 1	1	1		
. CO3	3	2	· 2	2			1	1			2
CO4	3	2	2	3			1	1			2
C05	3	2	2	2			1		1		2
PO			-					1	1		2
Target	3.00	2.00	2.00	2.40	#DIV/01	#DIV/01	1.00	1.00	1.00	#DIV/01	2.00





Program-	-	B. Pharm.		•		Year	2
Course-		Pharmacology I - Theory II-yr		Code	BP404T	Semester	4
Course Instructors		Dr. Abhishek Kumar	Mr. Kapil Sachan			Course Type-	Theory

CO No.	Statement of Course Outcome	BL	КС
	After completion of the course, the student will be able to		
C01	. Understand the basics of pharmacology and Pharmacokinetics	Understand	Factual & Conceptual
CO2	Demonstrate the basics of Pharmacodynamics and drug interactions	Apply	Factual & Conceptual
CO3	Elustrate the pharmacology of drugs acting on peripheral nervous system	Apply	Factual & Conceptual
C04	Explain the pharmacology of drugs acting on neurohumoral transmission related disorders	Analyze	Factual & Conceptual
C05	Analyze the pharmacology of drugs acting on Psychopharmacological disorders	Analyze	Factual & Conceptual

Mapping	of COs w	ith POs				N					
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3		1	1		2		2	3	1	3
C02	3	1	1	1		2		2	3	1	3
C03	3		1	1		2		2	3	1	3
C04	3		1	1		2		2	3	1	3
C05	3	1	<b>1</b>	1		2	1	2	3	1	3
C06	3		2	- 1		2	1 <b>1</b>	2	1	1	3
PO Target	3.00	1.00	1.17	1.00	#DIV/01	2.00	1.00	2.00	2.67	1.00	300

Signature of Course Instructor (s):



Program- B. Pharm. 1 ear Course- BP405T Pharmacognery 1 - Theory 11-yr Code BP405T Semester	4	
Course- BP405T Pharmacognesy I-Theory II-yr Code BP405T Semester		
	4	
Course Instructors	Theory	

CO No.	Statement of Course Outcome	BL	кс
	After completion of the course, the student will be able to		·
C01	Illustrate the sources of drugs, classification of crude drugs and justify the quality control of herbal drugs.	Analyze	Factual, Conceptual & Procedural
CO2	Acquire the knowledge of the techniques used for cultivation and production of crude drugs and outline conservation of medicinal plants.	Apply	Factual, Conceptual & Procedural
CO3	Illustrate the concepts of Plant Tissue Culture and to describe properties of edible vaccines.	Analyze	Conceptual & Procedural
C04	Explore the working of various traditional systems of medicine and to summarize properties of various secondary metabolites.	Understand	Factual & Conceptual
C05	Attain the knowledge of the properties and applications of plant fibers, hallucinogens, carbohydrates, lipids, proteins, enzymes and marine products.	Apply	Factual & Conceptual

Mapping o	of COs wi	ith POs									
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3	18		3							2
CO2	3		2								2
C03	3		2	3							2
C04	3		2	3							2
C05	3	- 1	2	3							2
PO Target	3.00	1.00	2.00	3.00							200

Richa Goel



		CO Staten	ients and CC	- PO M	apping	
Program-		B, Pharm.		Year	2	
Course-	Me	dicinal Chemistry I- Practical	Code	BP406P	Semester	4
Course Inst	ructors	Dr. Parul Grover			Course Type-	Lab

CO No.	Statement of Course Outcome	BL	кс	
а 		-		
CO1	Synthesize drugs and metabolites.	Create	Conceptual and Procedural	
CO2	Determine the assay of drugs.	Apply	Conceptual and Procedural	
CO3	Determine the partition coefficient of drugs.	Apply	Conceptual and Procedural	

Mapping	of COs w	ith POs		×		3				- 1	1 T 1
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
CO1	3	1	3	3	1	2	; 1	1	1	1	3
CO2	3	1	3	3	1	2	1	1	1 .	1	3
CO3	3	1	3	3	1 ·	2	1	1	1	1	3
PO Target	3.00	1.00	3.00	3.00	1.00	2.00	1.00	1.00	1.00	1.00	3.00

Signature of Course Instructor (s):



OBE- 2022-23e

### KIET School of Pharmacy, KIET Group of Institutions

Program-		B. Pharm.	Year	2		
Course-	P	hysical Pharmaceutics II- Practical	Code	BP407P	Semester	4
Course Ins	tructors	Ms. Sakshi Garg		-	Course Type-	Lab

CO No.	Statement of Course Outcome	BL	КС	
1	After completion of the course, the student will be able to	22		
CO1	Evaluate Particle size, Particle size distribution, and derived properties of the powder.	Evaluate	Factual, Conceptual, Procedural	
CO2	Calculate the viscosity of viscous samples using different methods.	Apply	Factual, Conceptual, Procedural	
CO3	Evaluate the prepared suspension and emulsion formulations.	Evaluate	Factual, Conceptual, Procedural	
CO4	Evaluate the kinetics of chemical reactions with stability studies	Evaluate	Factual, Conceptual, Procedural	
CO5		a Anglandar Anglandar		
CO6				

Mapping	of COs w	ith POs								1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 19	
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3	2	2	2	1	1	1	1	1	212	2
CO2	3	2	2	2	1	1	1	1	1	1	2
CO3	3	2	2	2	1	1	1.1	1	1	1	2
CO4	3	2	2	2	1	1	. 1	1	1	1	2
C05						•		-			
CO6	1. 21.	20 - 11									
PO Target	3.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00

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Program-	B. Pharm.	Year	2		
Course	Pharmacology I - Theory II-yr	Code	BP408P	Semester	4
Course Instructo	DIS Mr. KAPIL SACHAN			Course Type-	Lab

CO No.	Statement of Course Outcome			
	After completion of the course, the student will be able to	BL	KC	
CO1	O1 Understand the instruments and laboratory animals as per CPCSEA guidelines used in experimental pharmacology.		Conceptual	
CO3	Understand the different routes of drug administration in mice/rat and various laboratory techniques used for animal studies.	Understand	Conceptual	
CO3	Understand the effect of enzyme inducers on sleeping time in mice and effect of drugs on ciliary motilitiy in frog.	Understand	Conceptual	
C04	Understand the role of muscle various drugs acting on CNS and PNS in experimental pharmacology.	Understand	Conceptual	
C05	Apply the concept of anti catatonic, anxiolytic activity and study of local anaesthatic agents in rats.	Apply	Conceptual &	

Mapping	of COs w	ith POs									
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
COI	3	1	2	2		2	2	2	3	2	3
CO2	3	1	2	2		2	: 2	2	3	2	3
C03	3	1	2	2		2	2	2	3	2	3
C04	3	1	2	2		2	2	2	3	2	3
C05	3	1	2	2		2	2	2	3	2	3
PO Target	3.00	1.00	2.00	2.00	#DIV/01	2.00	2.00	2.00	3.00	2.00	3.00



OBE- 2022-23e

### KIET School of Pharmacy, KIET Group of Institutions

CO Statements and	1 CO- PO M	lapping
	the second s	

Program-	B. Pharm.	B. Pharm.						
Course-	Pharmacognosy I- Practical	Code	BP409P	Semester	4			
Course Instruct	ors Dr. Deepti Katiyar, Dr. Richa Goel, Ms. Pragati Gupta	1		Course Type-	Lab			

CO No.	Statement of Course Outcome	BL	КС				
	After completion of the course, the student will be able to						
C01	Describe the tools used in quantitative microscopy and understand the concepts behind the procedures used	Understand	C/P				
CO2	Evaluate the crude drugs on the basis of WHO guidelines	Evaluate	C/P				
CO3	Analyze the specified phytoconstituents utilizing the standardized parameters	Analyze	C/P				

g of COs w	with POs					4 E		•			
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3	2	2	2		2					2
CO2	3	2	2	2		2		ан 1 <sup>- 2</sup>	- < 18	4 100 - 41	2
CO3	3	2	2	2		2	6 A				2
PO Target	3.00	2.00	2.00	2.00		2.00		-	-	<i>t</i> .	2.00

Course Instructor (s):

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PHARA OOH: \* 6

Program-	5	B. Pharm.			Year	2
Course-	Blon	sedical waste management II-yr	Code	BP412	Semester	4
Course Instru	ictors	Ms. Riya Rastogi		2	Course Type-	Theory

CO No.	Statement of Course Outcome After completion of the course, the student will be able to	BL	кс
C01	Generalise the fundamentals of hazardous waste and also the types and sources of hazardous as well as biomedical waste.	Understand	Factual / Conceptual
CO2	Acquire the knowlwdge of health impacts of various types of hazards and biomedical wastes.	Apply	Factual / Conceptual
CO3	Attain the knowledge about the storage, collection and transport of hazards and biomedical wastes, and also to study about the guidelines used for handling and segregation of wastes.	Apply	Factual / Conceptual
CO4	Determine the waste processing techniques which includes incineration, solidification and stabilization of hazardouus wastes.	Apply	Factual / Conceptual
.CO5	Illustrate the basics of the waste disposal options and also a detailed study on the disposal in landfills and also to learn about landfill remediciation .	Apply	Factual / Conceptual

Mapping	of COs w	ith POs									
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
CO1	1	1	3	2	1	1	1		1	3	2
CO2	1		1	1 6 9	1	1	2	- 1	2	3	2
CO3	1	1.	2	1	1	1 -	3	-1	1	1	1
CO4	1	2	2	2	1	1		1	1	2	- 1 -
CO5	-	2	1	2	•	1	1	2	1	2	3
PO Target	1.00	1.50	1.80	1.75	1.00	1.00	1.75	1.25	1.20	2.20	1.80

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		CO State	ements	and CC	-rom		3	
Program-	22	B. Pharm.				Year		
Course-	Medicinal Chemistry III - Theory III-yr				BP601T	Semester	6	
Course Instructors Dr. Valshall M Pat			Dr Gadma			Course Type-	Theory	
		Dr. Valshall M Patil	·	Ci Garini				

CO No.	Statement of Course Outcome	BL	КС
	After completion of the course, the student will be able to		
CO1	Understand the approach of classification, nomenclature, synthesis, stereochemistry,	Understand	Conceptual
CO2	Apply the concept of nomenclature, stereochemistry, structure activity relationship, abamical degradation classification of important products of Macrolide, Antimalarials,	Apply	Conceptual
CO1	Analyze the various aspects of chemotherapy of Anti-tubercular Agents, Urinary tract	Analyze	Conceptual
C04	anti-infective agents and Antiviral agents. Illustrate the core principles of Chemotherapy of Antifungal agents, Anti-protozoal	Apply	Conceptual
	Agents, Sulphonamides and Sulfones, Polate reductive innertere	Analyze	Conceptual
CO5	Analyze the Idea of Drug Dowley, and Dru		
CO6		· · ·	

Mapping	of COs w	ith POs								DO 10	PO 11
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO IU	1011
001	1	1	1	1		1		1 .		1	1
COI	<u> </u>		2	2		2		2	- 8	1	1
CO2	1	1				2		2		1	1
CO3	1	1	2	2				2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2	1
CO4	1	1	1	1		2	-	2			
C05	1	- 1 -	. 1	1		1	1	2			
CO6					1						
PO	1.00	1.00	1.40	1.40	#DIV/01	1.60	#DIV/01	1.80	#DIV/01	1.00	1.00

Signature of Course Instructor (s):

Vaishali M Patil



		CO Staten	nents a	and CO	- <u>PO M</u>	ipping	
Program-		B. Pharm.	Year	3			
Course-		Pharmacology III - Theory III-yr	Code BP602		BP602T	Semester	6
Course Ins	structors	Dr. Shardendu K Mishra	Mr. H	limanshu A	ggarwal	Course Type-	Theory

CO No.	Statement of Course Outcome	BL	кс
e:	After completion of the course, the student will be able to		
C01	Understand the pharmacology of the drugs used in respiratory and GIT disorders.	Understand	Conceptual
CO2	Explain the utility of antimicrobial agents used for curing infections.	Apply	Conceptual
CO3	Illustrate the various mechanisms by which anti-microbial agents act and their applications in infection management.	Apply	Conceptual
CO4	Express the pharmacological profiles of chemotherapeutic agents and immunomodulators.	Apply	Conceptual
.CO5	Apply the principles of toxicology and chrono pharmacology.	Apply	Conceptual & Procedural

Mapping o	of COs wi	ith POs				e	And a	· · · ·		· · · · ·	
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3	1	2	2		2	1	1	3	2	3
CO2	3	1	2	2		2	. 1	1	3	2	3
CO3	3	1	2	2		2	1	1	3	2	3
CO4	3	1	2	2		2	= 1	1 =	3 .	2	3
CO5	3	- 1	2	2.		2	1	1	3	2	3
PO Target	3.00	1.00	2.00	2.00		2.00	1.00	1.00	3.00	2.00	3.00



Program	CO Statemen	apping			
Course	B. Pharm.	e fin i n		Year	3
Course- Herba	l Drug Technology – Theory III-yr	Code	BP603T	Semester	6
Course Instructors.	Mr. Harsh Rastogl	Mr. Balwan S	ilngh	Course Type-	Theory

Company of the			
CO No.	Statement of Course Outcome		
	After completion of the course, the student will be able to	BL	КС
COI	Generalize the Indian system of medicines and fundamentals of traditional herbal raw materials from its cultivation to collection with the help of biodynamic agriculture.	Understand	Factual
CO2	Analyze the demand and need of nutraceuticals with the help of herbal drug and herbal food interactions.	Analyze	Conceptual
CO3	Apply various herbal drug cosmetics and formulations with the study of their excipients.	Apply	Procedural
CO4	Apply the National and International regulatory guidelines for the assessment of herbal drugs and patenting.	Apply	Procedural
C05	Operate the Current Good Manufacturing Practices(cGMP) in herbal drug industry.	Understand	Procedural

Mapping	of COs w	vith POs	· · · .								
$z\in \mathbb{R}^{n}$	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	2		1	2		2		1	2	3	3
CO2	2	а. 1996 — 1996				2		1	2	3	3
CO3	2		1	2		1		1	2	3	3
CO4	2	1	1	- 1 ( M)		2	2	3	3	3	3
CO5	2	1	1			2	2	3	3	3	3
PO Target	2.00	1.00	1.00	2.00		1.80	2.00	1.80	2.40	3.00	3.00

Signature of Course Instructor (s):

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Prog	ram.	<u>CO Stat</u>	ements and CO	- PO Ma	apping		
Cour	Re Blank	B. Pharm.			Year		,
Car		aceutics and Pharmacokinetics - Ti	heory III-yr Code	BP604T	Semester		6
Cour	se Instructors	Mr.Sanjeev Chauhan	Dr. Ashu Mitt	al	Course Type-	т	neory
COI	No.	Statement	of Course Outco	me			
	Afi	BL	кс				
COI	I. Understa influencing evaluating distribution	nd the mechanisms of drug absorption g absorption and the impact of non-p- the distribution and tissue permeabil , and the factors that affect protein-d well as the clinical signif	on through the gastrointe croral extra-vascular rou lity of drugs, their bindin rug binding, and analyza icance of protein bindin	stinal tract ( ites on drug a ng properties e the kinetics g of drugs,	GIT), including factors absorption, while also s, apparent volume of s of protein binding as	Understand	Factual, Conceptual
CO2	pathways, rem of drug excre definitions models, in-vit	e processes of drug elimination, inclu- nal excretion of drugs, factors influen- etion, while also evaluating the conce and objectives, assessment methods tro-in-vivo correlations, bioequivaler and bioavailability	uding drug metabolism i icing renal excretion, rer cpts of bioavailability an for measuring bioavaila for measuring bioavaila ice studies, and strategie y of poorly soluble drug	and the explanation of the expla	oration of metabolic , and non-renal routes lence, including their ro drug dissolution e the dissolution rates	Analyzo	Conceptual, Procedural
203	pharmacokinet a focus on the such as intr analyzing and i definitions, me	principles of pharmacokinetics, inclu ics, different compartment models, r e one compartment open model, and avenous injection (bolus), intraveno interpreting pharmacokinetic parame schods of elimination, and comprehe	ading understanding the non-compartment model its application in variou us infusion, and extra va eters such as KE, t1/2, V ending their significance	definition a ls, and physi us modes of ascular admi /d, AUC, Ka and practic	nd introduction to ological models, with drug administration inistrations, while b, Clt, and CLR, their al application in the	Apply	Conceptual, Procedural
04	Illustrate multicompartme dosing, steady- their signific	the principles of pharmacokinetics ent models, specifically the two-com state drug levels, and the calculation canco in clinical settings and demon pharmaco	to comprehend and app partment open model, i n of loading and mainte ustrating the ability to a pkinetic data.	oly the conce including the mance doses malyze and in	pts related to s kinetics of multiple , while recognizing nterpret relevant	Analyzo	Conceptual
05	Demonstrate a c this concept, id application of the and examples o	omprehensive understanding of non lentification of factors that contribu e Michaelis-Menten method for esti of drugs exhibiting non-linear pharm implications of non-linearity in dru	llinear pharmacokinetic to to non-linearity in dr mating parameters, illu nacokinetic behavior, v 1g dosing and therapeut	s, including ug pharmac strated throu while critical tic outcome	the introduction to okinctics, and the ugh the explanation lly evaluating the s.	Apply	Conceptual, Procedural

Mapping	g of COs	with POs	· · ·								
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
CO1	3	· 1.	1			1	1	. 1		1	1
CO2	3	1	3	1		1		1			2
CO3	3	1	1	1		1		1			
CO4	3	1	3		1 1 6	1		1		-	1
CO5	3	1	1	6		1	. 1	1		1	1
PO arget	3.00	1.00	1.80	1.00	#DIV/01	1.00	1.00	1.00	#DIV/01	1.00	1 20
CO5 PO arget	3 3.00	1 1.00	1 1.80	1.00	#DIV/01	1 1.00	1	1 1.00	#DIV/01	1	



Program-		B. Pharm.				3	
Course-	Pharm	anceutical Blotechnology-Theory I	ll-yr	Code	BP605T	Semester	6
Course Ins	tructors	DR. Monika Kaurav				Course Type-	Theory

CO No.	Statement of Course Outcome	BL	кс
	After completion of the course, the student will be able to		
CO1	Explain biotechnology and its importance in pharmaceuticals with applicable methodologies	Understand	Conceptual, Factual and Procedural
C02	Analyze the recombinant DNA technology and its application in pharmaceuticals production.	Analyze	Conceptual, Factual and Procedural
C03	Demonstrate immunity and various immunological products and their production methods.	Apply	Conceptual, Factual and Procedural
CO4	Analyze various immune assay techniques for determination of immunological products.	Analyze	Conceptual, Factual and Procedural
CO5	Apply different fermentation techniques in production of various fermentation products.	Apply	Conceptual, Factual and Procedural

Mapping	of COs w	ith POs						4.		14	
	PO1	PO2	- PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
CO1	3	1			. 1	1	2	- 1	1	1	
CO2	3	1	1	ĺ	1	1	; 2		1	1	1
CO3	3	1	1	1	.1	1	2	1	1	- 1	1
CO4	3	1	2	· · · · ·	• 1	1	2		1	1	. 1
CO5	3	1	-1		1	1	2	1	1	1	1.
PO Target	3.00	1.00	1.25	#DIV/01	1.00	1.00	2.00	1.00	1.00	1.00	1.00

Signature of Course Instructor (s):

**MONIKA KAURAV** 



Program-		B. Pharm.		Year	)	
Course		Quality Assurance- Theory Ill-yr	Code	BP606T	Semester	6
Course Inst	ructors	Surbhi Kamboj	Dr. Lakshr	ni	Course Type-	Theory

CO No.	Statement of Course Outcome	BL	кс
	After completion of the course, the student will be able to		
C01	Understand major guidelines and principles related to Quality Assurance and Quality Management, Total Quality Management (TQM), ICH Guidelines, Quality by design (QbD), ISO 9000 & ISO14000 and NABL accreditation and Good Laboratory Practices (GLP)	Understand	Factual, Conceptual, Procedural
CO2	Able to acquire knowledge of organization and personnel, premises, equipments and raw materials related issues in pharmaceutical industry.	Apply	Conceptual, Procedural
СОЗ	Select proper procedure for quality control of containers, rubber closures, secondary packing materials and calibration and qualification of commonly used equipments e.g. pH meter and UV spectrophotometers	Evaluate	Pactual, Conceptual, Procedural
CO4	Relate various documents e.g. Batch Formula Record, Master Formula Record, SOP, Quality audit, Quality Review and Quality documentation, Reports and documents, distribution records.	Analyze	Factual, Conceptual, Procedural
CO5	Apply general principles of analytical method Validation, good warehousing practice, materials management, definition and general principles of calibration, qualification and validation, complaints and evaluation of complaints, Handling of return good, recalling and waste disposal.	Apply	Factual, Conceptual, Procedural

Mapping	of COs w	ith POs									
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
CO1	3	. 1	<u>.</u>	· · ·	1	1	2	1	2	1	1
CO2	3	1	1		1	1	2		2	1	1
CO3	3	1	- 1		1	1	. 2	1	2	1	1
C04	3	1	2		1	1	2	1	2	1	1
C05	3	1	1		1	1	2	1	2	1	1
PO Target	3.00	1.00	1.25	#DIV/01	1.00	1.00	2.00	1.00	2.00	1.00	1.00



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Program-		B. Pharm		Year	3	
Course-		BP607P Medicinal Chemi	stry III- Practical	Semester	6	
Course Instructors		Dr. Garima Kapoor	Dr. Vəlshall M. Patil	Course Type-	Lab	

CO No.	Statement of Course Outcome	BL	КС				
	After completion of the course, the student will be able to						
C01	Synthesize different molecules.	Apply	C				
CO2	Analyze the concept of assay of different drugs.	Analyze	с				
CO3	Apply the aspects of Chem Draw and use different online softwares to study ADME activity.	Apply	F/C				

Mapping	of COs w	ith POs	1	a			5.			$1 \leq i \leq j \leq i \leq j \leq j \leq j \leq j \leq j \leq j \leq j$	
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
CO1	1	2	1	1	1	2	1 -	1	2	The particular of the second s	Name I and
CO2	2	1	1	2	1	2	1	2	1	2	1
CO3	1	1	2	2	1 -	1	1	1	1	2	1
PO Target	1.33	1.33	1.33	1.67	1.00	1.67	1.00	1.33	1.33	1.67	1.00

Signature of Course Instructor (s) Garmie Kapoc

**BoS Remarks:** 

OF PH Col

Program-		B. Pharm.				Year	3
Course-		Pharmacology III- Practical		Code	BP608P	Semester	6
Course Ins	tructors	Dr. Shardendu Kumar Mishra	Mr. H	limanshu A	ggarwal	Course Type-	Lab

CO No.	Statement of Course Outcome	BL	кс
	After completion of the course, the student will be able to		
C01	Apply the methods for dose calculation for experimental animals.	Apply	Conceptual and Procedural
CO2	Apply the knowledge of experiment design and process by experimental pharmacology simulation software.	Apply	and Procedural
CO3	Understand the method of bioassay on different living tissue.	Understand	and Procedural
CO4	Understand the method of biochemical, pharmacokinetic analysis and different toxicity studies.	Understand	Conceptual
CO5	Understand the biostatisical method of data analysis.	Understand	Conceptual

Mapping	of COs w	ith POs									
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
COI	3	2	3	1.	1 .	2	2	1	1	1	3
CO2	3	2	3	1	1	2	2	1	1	1	3
CO3	3	2	3	1	1	2	2	1	1	1	.3
CO4	3	2	3	1	1	2	2	1 -	1	1	3
CO5	3	2	3	1	1	2	2	1	1	1	3
CO6											
PO Target	3.00	2.00	3.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	3.00



KIET S	chool of Pharms	acy, KIE' s and CO	<u>T Group</u> - PO Ma	of Institutions	
Course- Harbel D.	B. Pharm.		2	Year	
Course Instructory	ology- Practical	Code	BP609P	Semester	6
Mr. Harsh	Rastogi	Mr. Balwan S	ingh	Course Type-	lab

CO No.	Statement of Course Outcome		
	After completion of the course, the student will be able to	BL	КС
CO1	Determine various phytochemical screening of different group drugs.	Evaluate	Conceptual,
CO2	Prepare various herbal dosage forms.	Apply	Conceptual,
CO3	Evaluate various herbal dosage forms.	Evaluate	Conceptual,
CO4	Standardization of various marketed ayurvedic preparations.	Apply	Conceptual,
		a here	

Mapping	of COs w	ith POs	2				,				
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
CO1	3	2				8 . j.		1	2	1	3
CO2	3	2						1	1	2	3
CO3	3	2				1		1	2	3	3
CO4	3	2		8 - F				3	1	1	3
PO Target	3.00	2.00		a an an an an an				1.00	1.80	2.00	3.00



Program	<u>CO Statem</u>				
Course of the second se	B. Pharm.	-		Year	3
Course-	Industrial Training	Code	BP610P	Semester	6
Course Instructors	Mr. Debaprasad Ghosh			Course Type-	Lab

CO No.	Statement of Course Outcome		
•	After completion of the course, the student will be able to	BL	КС
CO1	Understand how an Industry or an approved research laboratory function and their sections and departments.	Understand	Factual, Conceptual
CO2	Outline the different roles and responsibilities inside an industry or an approved research laboratory.	Analyze	Factual, Conceptual.
CO3	Handle different equipments that are being used inside an industry or an approved research laboratory.	Apply	Conceptual, Procedural
CO4	Understand the approvals, rules and regulations related with an industry or an approved research laboratory.	Understand	Factual, Conceptual.
C05	Acquire knowledge about professionalism, methods of official communications inside an organization and its responsibilities towards the environment and the society.	Apply	Factual, Conceptual and Procedural.

Mapping	of COs w	ith POs									
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3	3	3	3	2	1	1	1	-		2
CO2	3	3	3	1	2	2	2	1	1		2
CO3	3	2	2	3	1	1	- 6				2
CO4	3	2	2	1	1	- 1	2	1	1	2	2
CO5	1	2	2	1	3	2	1	2	2	2	2
PO Target	2.60	2.40	2.40	1.80	1.80	1.40	1.50	1.25	1.33	2 00	200



#### Session- 2021-22 Even semester

### Program-B.Pharm

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#### Semester-8th

# Course-BIOSTATISITCS AND RESEARCH METHODOLOGY Cou

Course Code-BP801T

Course Instructors-Mr. Pankaj

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After com	pletion of the course, the student will be able to	Process Level (BL)	Category (KC)
COI	Interpret the basic concepts of biostatistics and general research methodology	Understand	Conceptual, and
CO2	Explain the appropriate statistical methods required for a particular research design	Analyze	Conceptual, and
C03	Adapt the appropriate research design and develop appropriate research hypothesis for a research project	Apply	Procedural Conceptual, and
CO4	Evaluate the methods while working on a research project work	Evaluate	Procedural Conceptual, Factual and
CO5	Explain the various types of research design and create an appropriate framework for research studies	Analyze	Procedural Conceptual and
- M			Factual

Mapping of COs with POs

	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	POS	POO	DO 10	
C01	1	1	3	1	-	-	-	1	109	PO 10	PO 11
CO2	1	2	3	2	1		-			a deserver a	a sig
C03	1	2	3	2	1	1	1		μ 	F	
CO4	1	1	3 1	3	в	-		ļ	2	1	1
CO5	1		3	3	2	<u> </u>	1	1	1		1
PO Target	1.00	1.50	3.00	2.20	1.75	1.00	1.00	I_	1	T	-
	•					1.00	1.00	1.00	1.20	1.00	1.00

Signature of CO- Coordinator



OBE- 2022-23e

KIET School of Pharmacy, KIET Group of Institutions

		<u>CO Stat</u>	ements a	ind CC	- PU M	apping	
Program-		B. Pharm.	Year	4			
Course-	Se	ocial and Preventive Pharmacy IV	Code	BP802T	Semester	8	
Course Ins	tructors	Ms. VIDHU SAXENA	Dr.	SHEENA N	IENTA	Course Type-	Theory

CO No.	Statement of Course Outcome	BL	кс
-	After completion of the course, the student will be able to		
C01	Examine the various concepts of health and diseases with reference to public health	Apply 3	Conceptual, Factual
CO2	Assess the general principles for prevention and control of various diseases in light of social and preventive medicine	Evaluate 5	Conceptual, Factual and Procedural
CO3	Outline the important attributes of various National Health Programmes in context with its objectives, functioning and outcomes	Analyze 4	Conceptual, Factual and Procedural
CO4	Analyze various National Health Programme and role of WHO in Indian health program in context with public health	Analyze 4	Conceptual, Factual and Procedural
CO5	Determine the role of community services in rural, urban and school health	Apply 3	Conceptual

Mapping	of COs w	ith POs	-	9 68	a. 80		3				-
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	• PO 9	PO 10	PO 11
CO1	3	2	3	1	1	3	3	3	3	1	3
CO2	3	3	3	1	-	3	3	3	3	1	3
CO3	3	3	. 2	- 1	·*•	3	3	3	- 3	1	3
CO4	3	3	2	- 1 -	-	3	3	3	3	1	3
CO5	3	1	· 2	1	- <sup>19</sup>	3	- 3	. 3	3	1	3
PO Target	3.00	2.40	2.40	1.00	1.00	3.00	3.00	3.00	3.00	1.00	3.00



Program-		B, Pharm	Year	4			
Course-	Ph	arma Marketing Management <sup>a</sup> I	Code	BP803ET	Semester	8	
Course In	structors	Ms. Shikha Kaushik	•	н —		Course Type-	Elective

CO No.	Statement of Course Outcome	ы	кс	
	After completion of the course, the student will be able to	BL		
CO1	Understand the basic concepts of marketing and their application in pharmaceutical marketing.	Apply	Factual/Con ceptual	
CO2	Illustrate product management in the pharmaceutical industry.	Apply	Factual/Con ceptual	
CO3	Analyze various promotional techniques for pharmaceutical products.	Analyze	Conceptual/ Procedural	
CO4	Apply knowledge about various pharmaceutical marketing channels.	Apply	Factual/Con ceptual	
CO5	Demonstrate the objectives and importance of price management in the pharmaceutical industry.	Apply	Factual/Con ceptual	

Mapping	of COs w	ith POs									
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
COI	2	3	3	1	3	3	2	2	3	3	2
CO2	3	3	2	3	3	3	2	3	3	3	3
CO3	2	3	3	3	_1	3	3	3	3	2	3
CO4	2	3	3	2	3	2	3	3	3	3	3
CO5	3	2	3	3	2	3	3	3	3	2	3
PO Target	2.40	2.80	2.80	2.40	2.40	2.80	, 2.60	2.80	3.00	2.60	2.80

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Program-	B. Pharm.	Year	T .		
Course-	Pharmacovigilance* IV-yr	Code	BPSOSET	Semester	
Course Instructor	rs- Dr. Vinay Kumar		X	Course Type-	Elective

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CO No.	Statement of Course Outcome		
	After completion of the course, the student will be able to	81.	кс
C01	Understand the importance of safety monitoring of drugs with emphasis on causality assessment of different classes of adverse drug reactions	Understand	Factual and Conceptual
CO2	Understand the drug and disease classification, various drug dictionaries, and coding in pharmacovigilance with examples	Understand	Factual and Conceptual
CO3	Apply the pharmacovigilance methods with vaccine pharmacovigilance and communication in pharmacovigilance	Apply	Factual and Conceptual
CO4	Illustrate the generation of safety data in preclinical, clinical, and post-approval phases and also study ICH	Analyze	Factual and Conceptual
CO5	Analyze genetics related adverse drug reactions and safety evaluation of drugs in special population	Analyze	Factual and Conceptual
CO6			

Mapping	of COs w	ith POs			T						
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
COI	3	1	1	2			1	2	2		1011
CO2	3		. 1	2			1	2	-		3
CO3	3	1	1	2		1	1	2	-		3
CO4	3		1	2		1			-		3
CO5	3			2		1					3
CO6						· ·			2	1	3
PO											
Target	3.00	1.00	1.00	2.00	#DIV/01	1.00	1.00	2.00	2.00	1.00	3.00

Signature of Course Instructor (s): Vinay Kumar

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OBE- 2022-23e

KIET School of Pharmacy, KIET Group of Institutions

Program	<u></u>	Statements and	CO-PO M	apping	
Course	B.I	Pharm.	Year	4	
Course	Caller Concret and Mandardization	of Herbal* IV-yr Co	de BP806ET	Semester	8
Instructors-	Dr. Kiran Sharma			Course Type-	Theory

CO No.	Statement of Course Outcome	-	1
	After completion of the course, the student will be able to	BL	кс
CO1	Understand the basic concepts of WHO guidelines for quality control of horbal drugs	Understand	Facutal
CO2	Describe the application and significance of Quality assurance in herbal drug industry	Apply	Conceptual
CO3	Determine the appropriate regulatory approval process and their registration in market.	Apply	Facutal
C04	Enhance the ability to analyze EU and ICH guidelines for quality control of herbal drugs	Create	Conceptual
CO5	Understand the various types of guidelines on safety monitoring of herbal medicines	Understand	Facutal
CO6			an star

Mapping	g of COs	with PO	s	T		1			r		
_	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3	1	3	2		1	2		1	1	3
CO2	3	2	2	1.		2	2	1	2	1	3
C03	3	2	2	2		2	2	1	2	1	3
C04	3	1	3	3			2	1	1	1	3
C05	3	1	2	2			2	1	2	- 1	3
CO6											
PO Target	3.00	1.40	2.40	2.00		1.67	2.00	1.00	1.60	1.00	3.00

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#### OBE- 2022-23e

# KIET School of Pharmacy, KIET Group of Institutions

Program-		B, Pharm,	Yoar		4			
Course-		Computer Alded Drug Design* IV-	yr	Code	HPB07ET	Semester		8
Course In	structors	Surya Prakash				Course T	ype-	Elective

CO No.	Statement of Course Outcome	BL.	кс	
	After completion of the course, the student will be able to			
CO1	Understand the basic concepts of CADD and rational approaches to drug design.	Apply	Facutal	
CO2	Illustrate QSAR, descriptors and various approaches.	Apply	Conceptual	
CO3	Understand and analyze virtual screening techniques and molecular docking.	Analyze	Conceptual	
CO4	Acquire knowledge about role of bioinformatics and cheminformatics in pharmaceutical drug discovery.	Apply	Conceptual	
C05	Demonstrate the objectives and importance of molecular mechanics and quantum mechanics in drug discovery.	Apply	Procedural	
CO6			-	

Mapping o	f COs wi	th POs			•						
	PO1	PO2	PO 3	PO 4	PO 5	PO'6	PO 7	PO 8	PO 9	PO 10	PO 11
CO1	2	3	3	1	3	3	2	2	3	3	2
CO2	3	3	2	3	3	3	2	3	3	3	. 3
CO3	2	3	3	3	1	3	3	3	3	2	3
CO4	2	3	3	2	3	2	3	3	3	3	3
CO5	3	2	3	3	2	3	3	3	3	2	3
CO6											
PO Target	2.40	2.80	2.80	2.40	2.40	2.80	2.60	2.80	3.00	2.60	2.80

Surya Prakash



		CO Statements a	ind CO	- PO Maj	ping	
Program-	<b>B.</b>	Pharm.	÷ .	Year	IV (FINAL)	
Course	C	osmetic Sciences (Theory)	Semester	Semester VIII		
Course Instructor	3-	Prof.(Dr.) N. G. Raghavendra F	Course Type-	Theory		

CO No.	Statement of Course Outcome	BL	кс
CO1	Illustrate the classification and applications of the cosmetic product; different excipients used to manufacture cosmetic products; basic structures of skin, hair, and problems associated with oral cavity	Apply	Conceptual, Factual, and Procedural
CO2	Explain the skin care products, antiperspirants, deodorants, and hair care products.	Analyze	Conceptual, Factual, and Procedural
CO3	Demonstrate the role of herbs in cosmetics, analytical cosmetics.	Apply	Conceptual, Factual, and Procedural
C04	Analyze the principles of cosmetic evaluation.	Analyze	Conceptual, Factual, and Procedural
C05	Apply the cosmetic problems associated with Hair and scalp and skin.	Apply	Conceptual, Factual, and Procedural

Mapping of COs with POs		1. A								1.11	(The star star of
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3	1	1	1	1	1	1	1	1	1	1
CO2	3	1	2	1	2	2	2	1	2	1	1
C03	3	1	2	1	1	1	1	1	- 1	1	1
C04	3	- 1	2	2	2 .	2	2	1	2	- 1	1
C05	3	1	2	1	1	1	1	1	1	1	1
PO Target	3.00	1.00	1.80	1.20	1.40	1.40	1.40	1.00	1.40	1.00	1.00

**BoS Remarks:** 

Session	2018-19	2019-20	2020-21	2021-22	2022-23 (Decided)
% Achieved (Internal Exams)	NA	NA	94.00%	60	60
% Achieved (External Exams)	NA	NA	77.42%		60

Prof.(Dr.) N. G. Raghavendra Rao

Signature of CO- Coordinator

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-				the second s			
Program-		B. Pharm.	Year	4			
Course-		Experimental Pharmacology* IV-	yr.	Code	BP810ET	Semester	8
Course In	structors	Mrs. Priya Bansal				Course Type-	Elective

CO No.	Statement of Course Outcome	DI	кс	
	After completion of the course, the student will be able to	BL		
CO1	Understand various guidelines (CPCSEA, OECD), techniques (blood collection) used in various strains of animals.	Understand	Factual & Conceptual	
CO2	Illustrate various screening models for estimation of CNS activity (analgesic, antipyretic, antidepressant, antiepileptic).	Apply	Factual, Conceptual Procedural	
CO3	Investigate different preclinical screening models for estimation of Autonomic Nervous System activity.	Analyze	Factual, Conceptual Procedural	
CO4	<b>Examine</b> antihypertensive, diuretics, anticoagulants, antidyslepidemic activity in experimental models.	Analyze	Factual, Conceptual Procedural	
CO5	Outline various research methodology and biostatistics for designing and interpretation of a research study.	Analyze	Factual & Conceptual	
CO6				

Mapping	of COs w	ith POs									
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
· CO1	3	2	1			- 1	; 3	- 1	2	1	2
CO2	3	2	2	2			1	.1.	2	1-	2
CO3	. 3	. 2	2	2		1	1	1	2	1	2
CO4	3	2	2	2	5	1	1	1	2	1	2
CO5	3	2	2	2	1	· 1 🤋	1	1	2	1	2
CO6			1.14	2 S							
PO Target	3.00	2.00	1.80	2.00	#DIV/01	1.00	1.40	1.00	2.00	1.00	2.00

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Program-		R Pharm	Year	4						
Course		Elective Prolact (s)		Code	RPRIAPW	Semester	8			
Course		Excure Project (3)		Code	Divid					
Course Instructors		Mr. Debaprasad Ghosh				Course Type-	Lab			

			1
CO No.	Statement of Course Outcome	BL	кс
	After completion of the course, the student will be able to		
C01	Understand the rationale behind performing project work in a specific elected area of pharmacy.	Understand	Factual, Conceptual
CO2	Acquire expertise in data mining, literature reviewing, and processing for a particular research area of pharmacy.	Apply	Conceptual, Procedural.
CO3	Analyze the implementation of available knowledge and technology to cater the needs under consideration.	Analyze	Conceptual, Procedural.
C04	Evaluate the potential role of new findings and their conversion into suitable solutions for the current pharmaceutical challenges.	Evaluate	Conceptual, Procedural.
C05	Develop novel theories, ideas, products, analytical methods, procedures, and techniques in a specific elected area in pharmacy.	Create	Conceptual, Procedural.

Mapping o	f COs wi	th POs								5 B	
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3	1	2	-		1	1	-	1	-	2
CO2	3	1	2	-	-	1	1	-	1	-	2
CO3	3	2	2	3	-	1	1	-	1	-	2
CO4	3	2	2	1	-	1	1	-	2	1 Q.	2
C05	3	1	2	2	-	1	1	-	2		2
PO Target	3.00	1.40	2.00	2.00	#DIV/01	1.00	1.00	#DIV/01	1.40	#DIV/01	2.00

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Program-		B. Pharm. Year			4	
Course-		Report on Industrial Tour	Code	Brsisr	Semester	8
Course In	structors	Mr. Debaprasad Ghosh			Course Type-	Lab

CO No.	Statement of Course Outcome	BL.	КС	
, ,	After completion of the course, the student will be able to			
CO1	Identify the layout of a pharmaceutical industry and the various sections and departments.	Remember	Factual Conceptual	
CO2	Understand how a pharmaceutical industry operates and the different roles and responsibilities of various personal involved.	Understand	Factual Conceptual	
CO3	Acquire the knowhow about the different equipments that are being used inside an industry for the manufacturing and testing of pharmaceuticals.	Apply	Conceptual, Procedural.	
CO4	Analyze various approval procedures, rules and regulations required to be followed inside a pharmaceutical industry.	Analyze	Factual, Conceptual and Procedural.	
C05	Compare the differences and similarities between the institutional theoretical and practical based learnings with that of the industrial day to day activities.	Evaluate	Factual, Conceptual and Procedural.	

Mapping	of COs w	ith POs									
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11
C01	3	2	1	-	-	-	1	-	-	-	2
CO2	3	2	2	2	1	1	2	1	-	-	2
CO3	3	2	2	3	-	1	-	-	-	-	2
CO4	3	2	2	-	1	1	2	1	1	2	2
CO5	3	2	1	2	-	1	1	-	-	-	2
PO Target	3.00	2.00	1.60	2.33	1.00	1.00	1.50	1.00	1.00	2.00	2.00

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### **KIET GROUP OF INSTITUTIONS**

### **KIET School of Management**

Subject Name	МСОВ	Subject Code	KMBN101
Session & Semester	2022-23& I	Faculty Name	Dr Shivani Agarwal & Ms. Tanushree

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After	completion of the course, the student will be able to	Process Level (BL)	(KC)
CO1	Apply the managerial practices and their perspectives.	Apply BL 3	Conceptual & Procedural
CO2	Acquire the decision-making skills through PODC Model of Management	Apply BL 3	Conceptual & Procedural
CO3	Apply the interpersonal skills for the attitude formation, personality and perceptions	Apply BL 3	Conceptual & Procedural
CO4	Correlate the motivational theories for imparting skills in student's behaviour.	Analyse BL 4	Conceptual & Procedural
CO5	Evaluating the managerial and leadership skills among students to enhance team building and adapt changes	Evaluate BL 5	Meta- Cognitive

#### COs with BLs & KCs

CO - PO/APO/PSO Matrix

Course Outcomes (COs)	Programme Outcomes (POs)					Additional Programme Outcomes APOs		
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2	
CO1	3	3	1	-	2	2	-	
CO2	2	1	-	1	1	2	1	
CO3	2	1	1	-	1	1	1	
CO4	2	1	2	1	2	1	-	
CO5	2	3	3	2	2	1	1	
PO / APO Target (Avg)	2.2	1.8	1.75	1.3	1.6	1.4	1.00	

### **KIET GROUP OF INSTITUTIONS**

### **KIET School of Management**

Subject Name	ME	Subject Code	KMBN102
Session & Semester 2022-23& I		Faculty Name	Dr. Sapna Yadav
			Dr. Meenakshi Tyagi

### COs with BLs & KCs

	COURSE NAME: MBA								
S.NO	COURSE OUTCOME	Blooms' Cognitive Process (BL)	Knowledge Category (KC)						
After C	ompletion of course, the student will be a	ble to:							
CO1	Apply micro economics principles to make effective economic decisions under conditions of risk and uncertainty.	BL3	Conceptual and Procedural						
CO2	Evaluate elasticities, law of demand, demand forecasting through various techniques for better utilization of resources in Industry.	BL5	Conceptual, Factual and Procedural						
CO3	Evaluate the effect of cost and production to business and their relationin the business world.	BL5	Conceptual, Factual and Procedural						
CO4	Evaluate the different market structure and their different equilibrium points of industry & consumers.	BL5	Conceptual, Factual and Procedural						
CO5	Evaluate micro & macroeconomic factors for business decision making.	BL5	Conceptual and Factual						

#### Table 1 CO - PO/APO/PSO Matrix

	PO-1	PO-2	PO-3	PO-4	PO-5	APO-1	APO-2
CO-1	3	3	1	3	1	1	2
CO-2	3	2	-	3	-	1	2
СО-3	3	2	-	3	-	-	-
CO-4	3	2	-	2	-	1	-
CO-5	3	2	-	2	-	1	-
PO / APO Target (Avg)	3	2.2	1	2.6	1	1	2

### **KIET GROUP OF INSTITUTIONS**

KIE1 School of Management								
Subj	ect Name	Financial Accounting	Subject	KM	IBN 103			
		& Analysis	Code					
Se	ssion &	2022-23, I	Faculty	Dr Amit Kumar Arora &				
Se	emester		Name	Dr. Pu	ja Roshni			
		Table 2 Tagging COs	with BLs & K	Cs				
CO No.	S	statement of Course Outco	Bloom's Cognitive	Knowledge Category				
After	r completion o	Process Level (BL)	(KC)					
CO1	Apply accou	inting concepts principles	and	Apply	Conceptual			
	conventions	s for their routine monetary transaction (BL:3 (KC:C)			(KC:C)			
	conventions	for their fourne monetary t	ransaction.	Apply)				
CO2	Prepare of Jo	ournal, Ledger and Trial Ba	lance from	Prepare	Conceptual &			
	transactions	according to Accounting Pr	rinciples.	(BL:3	Procedural			
				Apply)	(KC:C,P)			
CO3	Analyze fina	ancial statements and Cash	flow based on	Analyse	Conceptual &			
	Generally A	ccepted Accounting Princip	oles.	(BL:4	Procedural			
				Analyse)	(KC:C,P)			
CO4	Evaluate the	information contained in fi	nancial	Evaluate	Due ee deraal			
	statements th	hrough ratio analysis.		(BL:5	rocedural			
		- •		Evaluate)	(KC:P)			
CO5	Evaluate the	financial statements throug	sh comparative	Evaluate	Procedural			
	& common s	size statements.	(BL:5	$(KC \cdot \mathbf{P})$				
				Evaluate)	(KC.F)			

### **KIET School of Management**

#### CO - PO/APO/PSO Matrix

Course Outcomes (COs)	Р	rogramn	ne Outco	mes (PO	Additional Programme Outcomes APOs		
	PO1	PO1 PO2 PO3 PO4 PO5			APO 1	APO 2	
CO1	1	-	-	-	-	-	-
CO2	-	-	-	1	-	-	-
CO3	1	2	2	1	2	1	-
CO4	2	3	2	1	2	1	2
CO5	2	2	2	1	2	1	-
PO / APO Target (Avg)	1.5	2.3	2	1	2	1	2
# **KIET School of Management**

Subject Name	<b>Business Statistics</b>	Subject Code	KMBN104
Session & Semester	2022-23	Faculty Name	Dr Mani Tyagi &
		-	Dr. Sudheer

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Catagory					
After c	completion of the course, the student will be able to	Process Level (BL)	(KC)					
CO1	Analysis the data maine dependentiation Statistics	(BL4:	(KC: F,C,P)					
	Analyze the data using descriptive Statistics	Analyze)						
CO2	Analyze the data using Time Series & Index	(BL4:	(KC: C,P)					
	Number	Analyze)						
CO3	Analyze the data using Correlation & Regression	(BL4:	(KC: C,P)					
	Analysis	Analyze)						
CO4	Assess the data using Probability Theory &	(BL5:	(KC: C,P)					
	Distribution	Evaluate)						
CO5	Test the data using Hypothesis Testing & Business	(BL5:	(KC: C,P)					
	Analytics	Evaluate)						

### Table 3 Tagging COs with BLs & KCs

### Table 4 CO - PO/APO/PSO Matrix

Course Outcomes (COs)	Programme Outcomes (POs)					Additional Programme Outcomes APOs	
	<b>PO1</b>	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	1	3		1		2	3
CO2	1	3		1			3
CO3	1	3	1	1			3
CO4	2	3					2
CO5	2	3	1		1	2	3
PO / APO Target (Avg)	1.4	3	1	1	1	2	2.8

Subject Name		Marketing Subject Cod			K	MBN105		
		Management						
Session	& Semester	2021-1st	Faculty Nan	ne	Γ	Dr. Binkey		
			-		Sriv	astava & Dr.		
					Mı	rinal Verma		
		Table 5 Tagging CO	<b>)</b> s with BLs & K	Cs				
CO No.	St	atement of Course Out	come	Bloom's Cognitive		Knowledge Category		
After	completion of	Pro Leve	ocess el (BL)	(KC)				
CO1	Apply the	marketing management marketing mix strategie	App B	olying L 3	Conceptual			
CO2	Apply S	TP Analysis for Brand H	App B	olying L 3	Procedural			
CO3	Analyze	e 4Ps for product launch development	Ana B	lyzing L 4	Procedural			
CO4	Assess the	marketing plan for busin	Ana B	lyzing L 5	Meta- Cognitive			
CO5	Explore glo	bal and digital aspects of	f marketing for	Cre	ating	Meta-		
		business growth		B	L 6	Cognitive		

### **KIET School of Management**

### Table 6 CO - PO/APO/PSO Matrix

Course Outcomes (COs)	Programme Outcomes (POs)				Additional Programme Outcomes APOs		
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	2	2		1	2		
CO2	2	2		2	1		
CO3	2	3		2	2		
CO4	2	2	1	2	2	2	1
CO5	2	2		3	2	1	
PO / APO Target (Avg)	2	2.2	1	2	1.8	1.5	1

# **KIET School of Management**

Subject Name	Design Thinking	Subject Code	KMBN106
Session & Semester	2022-23& I	Faculty Name	Dr. Puja Roshani & Ms. Ankita

CO No.	Statement of Course Outcome	Bloom's	Knowledge
After c	ompletion of the course, the student will be	Cognitive	Category
	able to	<b>Process Level</b>	( <b>KC</b> )
		( <b>BL</b> )	
	Apply innovation and creativity in every	Apply	Conceptual and
CO1	stage of business life.	(BL 3: Apply)	Procedural
	Analyse design thinking process to solve	Use	Conceptual and
CO2	business problems.	Analyze	Procedural
		(BL4)	
	Develop a prototype solution for business	Create	Metacognitive
CO3	problem.	(BL6)	Knowledge

# Table 2 Tagging COs with BLs & KCs

Course Outcomes	Programme Outcomes (POs)					Additional Programme OutcomesAPOs	
(COS)	<b>PO1</b>	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	3	3	2	3	1	1	1
CO2	3	3	2	3	2	3	-
CO3	3	3	3	3	3	3	-
PO / APO Target	3	3	2.33	3	2	2.33	1.0
(Avg)							

# **KIET School of Management**

Subject Name	BC	Subject Code	KMBN107
Session & Semester	2022-23& I	Faculty Name	Dr. Kavita Tiwari

### COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Catagory
After o	completion of the course, the student will be able to	Process Level (BL)	(KC)
CO1	Apply business communication strategies and principles to prepare effective communication for domestic and international business situations.	Apply	Procedural
CO2	Assess ethical, legal, cultural, and global communication dimensions in cross cultural communication	Evaluate	Procedural
CO3	Develop an appropriate organizational formats and channels of organizational patterns used in business communications	Create	Conceptual
CO4	Apply emerging electronic modes of communication in business context	Apply	Procedural
CO5	Infer formal effective verbal and non-verbal communication skills to make information more accessible to the audience.	Analyze	Procedural

Course Outcomes	Programme Outcomes (POs)					Additional Programme Outcomes APOs	
(003)	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	3	3	2	2	2		
CO2	2	1	2	2	2		
CO3	2	2	2	2	2		
CO4	3	2	2	2			
CO5	3	3	2	2	2		
PO / APO Target (Avg)	2.6	2.2	2	2	2		

# KIET School of Management

Subject Name	SM	Subject Code	KMBN301
Session & Semester	2022-23& III	Faculty Name	Dr. Ranchay

Table 7 Tagging COs with BLs & KCs							
CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge				
After completion of the course, the student will be able to		Process Level (BL)	(KC)				
CO1	Apply Strategic Decision Making Process and Corporate Governance.	Apply BL 3	Conceptual				
CO2	Examine tools and techniques for analyzing a company strategically.	Apply BL 3	Conceptual & Procedural				
CO3	Analyze the nature and dynamics of the strategy formulation and implementation processes.	Analyze BL 4	Conceptual & Procedural				
CO4	Evaluate strategically and critically to achieve organizational goals through various Tools & Techniques.	Evaluate BL 5	Conceptual & Procedural				
CO5	Measure the performance of an organization.	Evaluate BL 5	Conceptual & Procedural				

Course Outcomes (COs)		Programi	Additional Programme Outcomes APOs				
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	-	1		1	2	1	1
CO2	2	2		2	2	2	3
CO3	2	2		1	2	2	2
CO4	3	3		2	3	2	3
PO / APO Target (Avg)	2.33	2		1.5	2.25	1.75	2.25

# **KIET School of Management**

Subject Name	I&E	Subject Code	KMBN302
Session & Semester	2022-23& III	Faculty Name	Dr. Prateek Gupta

	<b>Course Outcomes (COs)</b>							
CO No.	Statement of Course Outcome	Bloom's	Knowledge					
		Cognitive	Category					
After	completion of the course, the student will be able to	Process Level	(KC)					
		( <b>BL</b> )						
CO1	Examine various Innovation types, Platforms and	Apply	Conceptual &					
	Sources of innovation	BL 3	Procedural					
CO2	Demonstrate Entrepreneurial Decision Process	Apply	Conceptual &					
		BL 3	Procedural					
CO3	Analyze Entrepreneurial Finance, Assistance and role	Analyze	Conceptual &					
	of Entrepreneurial Development Agencies	BL 4	Procedural					
CO4	Develop a Business Plan using Feasibility Analysis	Create	Meta-Cognitive					
		BL 6						
CO5	Assess various Steps involved in launching a New	Evaluate	Conceptual &					
	Venture	BL 5	Procedural					

Course Outcomes (COs)	Pro	ogramme	Additional Programme Outcomes APOs				
	<b>PO1</b>	PO2	APO 1	APO 2			
CO1	2	-	-	1	-	3	2
CO2	2	3	1	1	-	3	2
CO3	2	2	-	2	-	3	2
CO4	3	3	1	-	2	3	2
CO5	2	3	2	3	2	3	2
PO / APO Target (Avg)	2.2	2.75	1.33	1.75	2	3	2

### **KIET School of Management**

Subject Name	UHVPE	Subject Code	KVE301
Session & Semester	2022-23& III	Faculty Name	Dr. Meenakshi
			& Ms.
			Tanushree

### COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After	completion of the course, the student will be able to	Process Level (BL)	(KC)
CO1	Discuss the need, basic guidelines, content and process for Value Education under the light of 'universal human values'.	Understand	Conceptual &Factual
CO2	Explore the concept of harmony in the human being (in Myself) being 'I' & 'body' as separate entity.	Apply	Conceptual &Factual
CO3	Ensure (bl4) the concept 'harmony' in the family and society keeping family as part of undivided society.	Analyze	Conceptual &Factual
CO4	Appraise (bl5) harmony in the nature and existence imbibing the role of individuals in maintaining the harmony within.	Evaluate	Conceptual &Factual
CO5	Conclude (bl5)the holistic approach of harmony in relation with Professional Ethics.	Evaluate	Conceptual &Factual

Course Outcomes (COs)	Programme Outcomes (POs)					Additional Programme Outcomes APOs	
	<b>PO1</b>	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	1	2	3	3	2	-	-
CO2	1	2	1	2	1	-	-
CO3	1	3	1	2	1	-	-
CO4	1	2	1	2	1	-	-
CO5	2	3	3	3	2	-	-
PO / APO Target (Avg)	1.2	2.4	1.8	2.4	1.4	-	-

# **KIET School of Management**

Subject Name	ТМ	Subject Code	KMBNHR01
Session & Semester	2022-23& III	Faculty Name	Dr.Shivani

### COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's	Knowledge
After completion of the course, the student will be able to		Cognitive Process Level (BL)	Category (KC)
CO1	To Explore the concepts of attraction, acquisition, and retention of talent in organizations	Applying BL3	Conceptual and Procedural
CO2	Applying Acquisition skills through HR tools	Applying BL3	Conceptual and Procedural
CO3	Applying Recruitment and selection process in real world situation.	Applying BL3	Conceptual and Procedural
CO4	Evaluate Employee Retention skills among students to enhance pools of competent people.	Evaluate BL 5	Conceptual and Procedural
CO5	Evaluate practical application of the emerging trends that managers may face in decision-making processes	Evaluate BL 5	Conceptual and Procedural

Course Outcomes	Programme Outcomes (POs)				Additional Programme OutcomesAPOs		
(COS)	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	2	1	2	2	2	2	-
CO2	1	2	1	2	1	1	-
CO3	2	1	2	1	2	1	1
CO4	1	1	2	2	2	1	1
CO5	1	2	2	1	1	1	1
PO / APO Target (Avg)	1.4	1.4	1.8	1.6	1.6	1.2	1

### **KIET School of Management**

Subject Name	ERLL	Subject Code	KMBNHR02
Session & Semester	2022-23& III	Faculty Name	Dr. Puja Roshani

### COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitivo	Knowledge Catagory
After co	ompletion of the course, the student will be able to	Process Level (BL)	(KC)
CO1	Apply employee relations management tools to improve the employer and employee relations.	Apply (BL3)	Conceptual and Procedural
CO2	Use the collective bargaining and grievance redressal mechanism in the organization.	Apply (BL3)	Conceptual and Procedural
CO3	Analyse the procedures for settlement of industrial disputes under mandate of laborlegislations.	Analyse (BL4)	Conceptual and Procedural
CO4	Analyse Wages and Child labour under mandate of labor legislations.	Analyse (BL4)	Conceptual and Procedural
CO5	Analyse the social security enactment under mandate of labor legislations.	Analyse (BL4)	Conceptual and Procedural

Course Outcomes (COs)	Programme Outcomes (POs)			Additional Pr Outcomes	ogramme APOs		
	<b>PO1</b>	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	3	1	2	2	1	1	1
CO2	3	3	2	1	2	1	1
CO3	1	2	2	1	1	3	1
CO4	3	1	1	3	2	1	1
CO5	1	1	1	3	1	3	1
PO / APO Target	2.20	1.60	2	2	1.60	1.80	1
(Avg)							

# **KIET School of Management**

Subject Name	CBMC	Subject Code	KMBNMK01
Session & Semester	2022-23& III	Faculty Name	Mr. Anjan

### COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitivo	Knowledge	
After co	ompletion of the course, the student will be able to	Process Level (BL)	Category (KC)	
CO1	Explore the cognitive skills for decision making abilities using Consumer Behavior Theory	Applying BL3	Conceptual and Procedural	
CO2	Apply Consumer Behavior Models for imparting selling skills	Applying BL3	Conceptual and Procedural	
CO3	Illustrate Integrated Marketing Communication approach in designing advertising Plan	Applying BL3	Conceptual and Procedural	
CO4	Evaluate Interactive Marketing for Promotions	Evaluate BL-5	Conceptual and Procedural	
CO5	Evaluate creativity and critical thinking for marketing campaign	Evaluate BL-5	Conceptual and Procedural	

Course Outcomes	I	Program	me Outc	omes (P	Additional Programme Outcomes APOs		
(COs)	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	2	2	1	2	2	2	2
CO2	2	2	1	3	2	2	1
CO3	2	3	-	2	2	2	1
CO4	2	2	1	2	2	2	1
CO5	2	1	-	2	2	3	-
PO / APO Target (Avg)	2	2	1	2.2	2	2.2	1.25

#### **KIET School of Management**

Subject Name	Marketing Analytics	Subject Code	KMBNMK02
Session & Semester	2022-23& III	Faculty Name	Dr. Deepa

#### CO Bloom's **Statement of Course Outcome** Knowledge No. Cognitive Category Process After completion of the course, the student will be able (KC) Level (BL) to Demonstrate Marketing Analytics through CO1 BL3 Conceptual Applications & Approaches Apply Pricing Analytics with the help of Conceptual, CO2 BL3 various tools Procedural Analyze Sales Forecasting through Conceptual, CO3 BL4 Regression Procedural Measure Customer Lifetime value with the Conceptual, CO4 segmentation-targeting-positioning (STP) BL5 Procedural framework Measure the Effectiveness of Retailing and Conceptual, CO5 BL5 Advertising Procedural

#### **Course Outcomes:**

Course Outcomes (COs)	Programme Outcomes (POs)			Additional Programme Outcomes APOs			
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
C01	3	3	-	1	1	1	1
CO2	3	3	-	1	1	1	1
CO3	3	3	-	1	1	1	1
CO4	3	3	-	1	1	1	1
CO5	3	3	-	1	1	1	1
PO / APO Target (Avg)	3	3	-	1	1	1	1

# **KIET School of Management**

Subject Name	Investment Analysis & Portfolio Management	Subject Code	KMBFM 01
Session & Semester	2022-23& III	Faculty Name	Dr. R. Srinivasan

### **Course Outcomes:**

COU	COURSE NAME: Investment Analysis & Portfolio Management (KMBFM 01)						
S.No	COURSE OUTCOME	<b>Blooms'</b> Cognitive	Knowledge				
		Process (BL)	Category (KC)				
After C	ompletion of course, the student will be able to:						
CO 1	Compute Risk & Return of different assets on	Apply BL 3	Conceptual &				
	the Time Series Data		Procedural				
CO 2	Develop the financial model for Optimal	Apply BL 3/	Conceptual &				
	Portfolio Construction	Create BL 6	Procedural				
	Perform Fundamental Analysis on the	Apply BL 3/	Conceptual &				
CO 3	companies' financial data for long-term	Analyze BL 4/	Procedural				
	investment decisions	Evaluate BL 5					
	Perform Technical Analysis on Time Series	Apply BL 3/	Conceptual &				
CO 4	Data for short-term investment decisions	Analyze BL 4/	Procedural				
		Evaluate BL 5					
	Evaluate the portfolio performance using	Apply BL 3/	Conceptual &				
CO 5	Sharpe, Treynor, Jenson & other relevant ratios	Analyze BL 4/	Procedural				
		Evaluate BL 5					

# CO - PO/APO/PSO Matrix

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Course Outcomes (COs)		Programme Outcomes (POs)					Additional Programme Outcomes APOs	
	PO	-1	PO-	PO-	<b>PO-4</b>	PO-	APO	APO
			2	3		5	1	2
CO-1	-	1	3		1	1	2	2
CO-2		1	3		2		3	2
CO-3		2	3		3	3	3	3
CO-4	-	1	3		1			1
CO-5		3	3		1	1		1
PO / APO Target (Avg)	1.6		3		1.6	1.67	3	1.8

# **KIET School of Management**

Subject Name	FPTM	Subject Code	KMBNFM02
Session & Semester	2021-22(ODD) & III	Faculty Name	Ms. Punjika

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After com	pletion of the course, the student will	Process Level	(KC)
	be able to	(BL)	~ ~ ~
CO1	Determine residential status with respect to various assessees and tax incidence thereto.	Apply BL 3	Conceptual& Procedural
$CO_{2}$	Assess the tax liability pertaining to	Evaluate	Conceptual&
002	Individuals	BL 5	Procedural
CO3	Assess various taxation provisions aligned with tax planning and tax management	Evaluate BL 5	Conceptual& Procedural
CO4	Determine Financial Goals for the	Apply	Conceptual&
CO4	investors.	BL 3	Procedural
CO5	Create financial plan	Create	Meta-Cognitive
		BL 6	Micia-Cognitive

#### **Course Outcomes:**

Course Outcomes (COs)	P	Programme Outcomes (POs)			Additional Program APO	nme Outcomes s	
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	-	1	-	1	-	-	1
CO2	1	1	-	1	-	-	1
CO3	1	1	-	1	-	-	2
CO4	2	3	1	2	-	1	2
CO5	2	3	1	1	1	1	2
PO / APO Target (Avg)	1.5	1.8	1	1.2	1	1	1.6

# **KIET School of Management**

Subject Name	DABD	Subject Code	KMBNIT01
Session & Semester	2022-23(ODD) & III	Faculty Name	Dr. Sangeeta Arora

со	Statement	BL	KD
CO 1	Understanding the role and responsibilities of data scientists in business environment.	Understand	Conceptual
CO2	Understanding the use of data management while considering working environment	Understand	Conceptua
CO3	Relating the work of data analysis detailing exercise of business analysis	Analyze	Procedural
CO4	Drawing graphs while using data using "R"	Analyze	Metacognitive
CO5	Analyze the use of data analytics based on logical ground.	Evaluate	Metacognitive

<b>Course O</b>	utcomes:
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	PO1	PO2	PO3	PO4	PO5	APO1	APO2
CO 1		3			3		
CO 2		3			3		
CO 3		3			3		
<b>CO 4</b>		3					
CO 5		3			3		
<b>PO</b> /		3			3		
APO							
Target							
(Avg)							

# **KIET School of Management**

Subject Name	AI AND ML FOR BUNESS	Subject Code	KMBNIT02
Session & Semester	2021-22(ODD) & III	Faculty Name	Dr. Amit Gutpa

### COs with BLs & KCs

	Course Outcomes (COs)	Bloom's KnowledgeLevel (BL)	Knowledge Category (KC)
At the e	end of this course, Student will be able to		
	To understand the need of Machine Learning &		F,C,P
CO-1	Statistics forsolving various problems.	BL2(understand)	
CO-2	To understand the basic concepts of Supervised and	BL3(Apply)	F,C,P
	Unsupervised learning.		
CO-3	To apply regression analysis on the data available.	BL3	F,C,P
CO-4	To design appropriate machine learning and apply on	BL3	F,C,P
	realworld problems.		
	To optimize different Machine Learning & Deep		F,C,P
CO-5	LearningTechniques.	BL3	

# Mapping of COs and POs

	PO1	PO2	PO3	PO4	PO5	APO1	APO2
CO1	1	3	0	0	1	3	3
CO2	1	2		1	1	3	2
CO3	1	2				3	2
CO4	3	3		2	1	3	3
CO5	3	3			1	3	2
PO / APO Target (Avg)	1.8	2.6	1	1.5	1	3	2.2

# **KIET School of Management**

Subject Name	SC & LM	Subject Code	KMBNOM01
Session & Semester	2021-22(ODD) & III	Faculty Name	Dr. Sapna Yadav

#### COs with BLs & KCs

COURSE NAME: MBA						
S.NO	COURSE OUTCOME	Blooms' Cognitive Process (BL)	Knowledge Category (KC)			
After Completion of course, the student will be able to:						
CO 1	Apply the basic framework of Supply Chain Management and basic concepts in logistics	BL3(Apply)	Conceptual and Procedural			
CO 2	Analyze distribution, warehousing and its roles in strategic planning with supply chain	BL4(Analyze)	Conceptual, Factual and Procedural			
CO 3	Evaluate supply chain performance through various tools of performance measurement.	BL5(Evaluate)	Conceptual, Factual and Procedural			
CO 4	Assess the strategic role and impact of IT on supply chain integration	BL5 (Evaluate)	Conceptual and Procedural			
CO 5	Analyze the latest trends in SCM and logistics	BL4 (Analyze)	Conceptual and Procedural			

	PO-1	PO-2	РО- 3	PO-4	PO-5	APO-1	APO-2
CO-1	1	2	-	1	2	-	1
СО-2	2	3	-	2	-	-	1
СО-3	1	2	1	2	1	1	-
СО-4	2	2	1	2	2	-	-
CO-5	1	1	-	1	2	1	1
PO / APO Target (Avg)	1.4	2	1	1.6	1.75	1	1

# **KIET School of Management**

Subject Name	OPC	Subject Code	KMBNOM02
Session & Semester	2022-23& IV	Faculty Name	Dr. Meenakshi Tyagi

	COS WITH BLS & KCS		
CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After	completion of the course, the student will be able to	Process Level (BL)	(KC)
CO1	Apply various fundamentals of production & operation planning to make full utilization of resources	Apply BL 3	Conceptual & Procedural
CO2	Analyze capacity and capability of an organization.	Analyze BL 4	Conceptual & Procedural
CO3	Analyze appropriate strategies concerning aggregate planning and cost.	Analyze BL 4	Conceptual & Procedural
CO4	Evaluate various techniques for waste reduction and value increase.	Evaluate BL 5	Conceptual & Procedural
CO5	Evaluate recent trends in production planning and control with latest global-production practices.	Evaluate BL 5	Conceptual, Factual & Procedural

### COs with BLs & KCs

Course Outcomes (COs)	Programme Outcomes (POs)				Additional Programme Outcomes APOs		
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	2	-	-	-	-	1	-
CO2	2	2	-	1	-	1	2
CO3	2	2	-	2	-	1	2
CO4	3	2	-	1	2	1	2
CO5	2	2	-	3	2	1	2
PO / APO Target (Avg)	2.2	2	-	1.75	2	1	2

# **KIET School of Management**

Subject Name	BELAB	Subject Code	KMBN201
Session & Semester	2022-23 (EVEN)	Faculty Name	Dr. Ranchay
	&II		Bhateja

	COs with BLs & KCs		
CO No.	Statement of Course Outcome	Bloom's	Knowladge
Aft	er completion of the course, the student will be able to	Cognitive Process Level (BL)	Category (KC)
CO1	Examine variegated forces of business environment.	Apply BL 3	Procedural
$CO^{2}$	Assess impact of business environment over organizations	Evaluate	Procedural
002	using SWOT/Porter's Five Forces model	BL 5	
CO3	Examine the provisions of Contract Act & Sales of Goods	Apply	Procedural
COS	Act giving rise to mercantile business deals	BL 3	
CO4	Assess the legal framework of Companies Act concerning	Evaluate	Procedural
CO4	incorporation and regulation of business organizations	BL 5	
CO5	Assess case laws facilitating business decisions	Evaluate	Procedural
COS		BL 5	

Course Outcomes (COs)	P	Programme Outcomes (POs)			Additional Programme Outcomes APOs		
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	2	2	-	3	2	2	2
CO2	3	3	-	3	2	2	3
CO3	1	1	-	1	1	-	2
CO4	1	1	-	1	1	-	2
CO5	1	1	-	1	1	-	2
PO / APO Target (Avg)	1.6	1.6	-	1.8	1.4	2	2.2

# **KIET School of Management**

Subject Name	HRM	Subject Code	KMB N 202
Session & Semester	2022-23 <b>2</b> <sup>nd</sup>	Faculty Name	Ankita Sharma
			and Tanushree

<u>Course Outcome</u>							
CO No.	Statement of Course Outcome		Bloom's	Knowledge			
After completion of the course, the student will be able to		Relevant POs/APOs	Cognitive Process Level (BL)	Category (KC)			
CO1	Apply HRM strategies and link it to corporate strategy in order to enhance company's business	PO1, PO2, PO4, PO5	Applying BL 3	Procedural			
CO2	Apply the in-depth insight of strategic HRP in order to take hiring decisions	PO1, PO2, PO4, PO5	Applying BL 3	Procedural			
CO3	Analyze training & need based training program	PO1, PO2, PO3, PO5, APO1	Analyzing BL 4	Procedural			
CO4	Compare the different tools of compensation management for assessing conducive environment for better human relations	PO1, PO2, PO3, PO4, PO5, APO1, APO2	Evaluate BL 5	Meta- Cognitive			
CO5	Summarize global culture and various international HR practices.	PO1, PO2, PO4, PO5, APO2	Evaluate BL 5	Meta- Cognitive			

### **CO - PO/APO Mapping**

Course Outcomes	Program Outcomes (POs)					APOs	
(COs)	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	2	1		2	2		
CO2	1	1		1	2		
CO3	1	2	1		2	1	
CO4	1	1	1	2	2	1	1
CO5	2	1	3	2	2		2
PO / APO Target (Avg)	1.4	1.2	1.66	1.75	2	1	1.5

# **KIET School of Management**

Subject Name	Business Research Methods	Subject Code	KMBN203
Session & Semester	2022-23 & II	Faculty Name	Dr. Puja Roshani / Sapna Yadav

### COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's	Knowledge
After co	ompletion of the course, the student will be able to	Cognitive Process Level (BL)	Category (KC)
CO1	Apply the the skills for conducting research to solve business problems	Apply (BL 3: Apply)	Conceptual and Procedural
CO2	Apply Critical thinking abilities for databased research process	Apply (BL 3: Apply)	Conceptual and Procedural
CO3	Apply the various tools and strategies of business process	Apply (BL 3: Apply)	Conceptual and Procedural
C04	Analyze the use of tools in the achievement of organization goals	Analyze (BL4 : Analyze)	Conceptual and Procedural
C05	Evaluate the research report used in academic- industry interface	Evaluate (BL5 :Evaluate)	Conceptual and Procedural

Course Outcomes (COs)	Programme Outcomes (POs)					Additional Programme Outcomes APOs	
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	3	1		1		1	1
CO2	3	2	1	1	1	1	1
CO3	3	2		1		1	1
CO4	3	1	2	1	1	1	1
CO5	3	1	1	1	1	1	1
PO / APO Target (Avg)	3	1.4	1.3	1	1	1	1

# **KIET School of Management**

Subject Name	FMCF	Subject Code	KMBN204
Session & Semester	2022-23 & II	Faculty Name	Dr. Amit Kr. Arora

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After	r completion of the course, the student will be able to	Level (BL)	(KC)
CO1	Apply Models of Corporate Finance and Governance and time value of money.	Apply (BL:3 Apply)	Conceptual (KC:C,P)
CO2	Analyze long term investment decisions on the basis of cost of capital.	Analyze (BL:4 Analyze)	Conceptual & Procedural (KC:C,P)
CO3	Analyze the best source of capital structure and leverage.	Analyze (BL:4 Analyze)	Conceptual & Procedural (KC:C,P)
CO4	Evaluate different models for firm's optimum dividend pay-out.	Evaluate (BL:5 Evaluate)	Procedural (KC:C,P)
CO5	Appraise the recent trends of mergers and acquisition and its valuation.	Appraise (BL:5 Evaluate)	Procedural (KC:C,P)

### COs with BLs & KCs

СО	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2	
CO-1	2	2	-	1	1	-	-	
CO-2	2	3	-	1	1	-	-	
CO-3	2	2	-	1	1	-	1	
<b>CO-4</b>	2	1	-	1	1	-	1	
CO-5	2	2	1	1	1	-	-	
Average	2	2	1	1	1	-	1	

# KIET School of Management

Subject Name	OM	Subject Code	KMBN205
Session & Semester	2022-23 & II	Faculty Name	Dr. Meenakshi Tyagi

### COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After	completion of the course, the student will be able to	Process Level (BL)	(KC)
CO1	Analyze the factors increasing productivity.	Analyze BL 4	Procedural
CO2	Analyze the dimensions of quality in services.	Analyze BL 4	Procedural
CO3	Evaluate various techniques of Inventory Management	Evaluate BL 5	Procedural
CO4	Evaluate supply chain drivers at national and global level.	Evaluate BL 5	Procedural
CO5	Create quality system in organization through various quality tools.	Create BL6	Procedural

Course Outcomes	Programme Outcomes (POs)					Additional Programme Outcomes (APOs)	
(000)	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	2	3	1	1	3	1	2
CO2	2	2	1	1	2	1	2
CO3	2	2	1	1	2	1	1
CO4	3	2	1	2	2	1	1
CO5	2	2	2	2	3	1	1
PO / APO Target (Avg)	2.2	2.2	1.2	1.4	2.4	1.0	1.4

# **KIET School of Management**

Subject Name	Quantitative Techniques For Managers	Subject Code	KMBN206
Session & Semester	2022-23 & II	Faculty Name	Dr. Mani Tyagi

### COs

CO No.	Course Outcome (CO)	Revised Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	Analyze the decision-making environments by using decision making approaches and tools	(BL4: Analyze)	(KC: F,C,P)
CO2	Analyze various quantitative problems using Assignment model and Game theory model	(BL4: Analyze)	(KC: C,P)
CO3	Assess various quantitative problems the Sequencing and Queuing Methods	(BL4: Analyze)	(KC: C,P)
CO4	Evaluate Replacement strategies and Project Management Techniques	(BL5: Evaluate)	(KC: C,P)
CO5	Formulate LPP and find optimal solution	(BL5: Evaluate)	(KC: C,P)

Course Outcomes (COs)	Р	rogramn	ne Outco	Additional Programme Outcomes APOs			
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	2	3			1		2
CO2	1	3	1	1		1	1
CO3	1	3	1			1	1
CO4	1	2	2	1		1	1
CO5	1	3		1	1	1	1
PO / APO Target (Avg)	1.20	2.8	1.33	1.00	1.00	1.00	1.20

# **KIET School of Management**

Subject Name	DMEC	Subject Code	KMBN207
Session & Semester	2022-23 & II	Faculty Name	Dr. Deepa

CO No.	Statement of Course Outcome	Bloom's Cognitive Process	Knowledge Category
After	completion of the course, the student will be able to	Level (BL)	(KC)
CO1	Acquire a sound understanding of the legal aspects of the laws affecting businesses' contracts.	Understand (BL2)	Conceptual & Procedural
CO2	Analyze requirements of Negotiable Instruments Act and Law of Partnership for the purpose of conducting business	Analysing (BL4)	Conceptual & Procedural
CO3	Analyze provisions of Companies Act concerning incorporation and regulation of business organizations	Analysing (BL4)	Conceptual & Procedural
CO4	Evaluate legal impact of business decisions of Sales and consumer related matters	Evaluating (BL5)	Conceptual & Procedural
CO5	Appraise the leading practical application-oriented case studies and case laws in arriving at conclusions for business decisions.	Evaluating (BL5)	Conceptual & Procedural

### Table 8 Tagging COs with BLs & KCs

### Table 9 CO - PO/APO/PSO Matrix

Course Outcomes (COs)	Programme Outcomes (POs)					Additional Programme Outcomes APOs	
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	1	1	1				1
CO2	1	1	1				1
CO3	1	2	1				1
CO4	1	2	1				1
CO5	1	1	1			1	1
PO / APO Target (Avg)	1	1.4	1			1	1

#### **KIET School of Management**

Subject Name	Management Information System	Subject Code	KMBN-208
Session & Semester	2022-23 <b>IInd</b>	Faculty Name	Dr. Shivani Agarwal

#### COs with BLs & KCs CO No. **Statement of Course Outcome** Bloom's Knowledge Category(KC) Cognitive Process Level After completion of the course, the student will be able to (BL) CO1 2 Understand the importance of information management in С business and management. CO2 Understand and formulate different types of information 3 С systems in business CO3 Apply the concepts in SQL Queries with the help of Oracle 4 Р software CO4 Analyze the various security and ethical issues with 4 Ρ Information Systems Evaluate SQL Queries on Spread sheet and Database CO5 4 Р Software

Course Outcomes(COs)	Progra	Program Outcomes (POs)					Additional Program Outcomes APOs	
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2	
CO1	3			1			2	
CO2	2	1					1	
CO3	1	2	1		1	2		
CO4	1			3			1	
CO5	1	2	2		2	2		
PO / APO Target (Avg)	1.6	1.6	1.5	2	1.5	2	1.3	

# **KIET School of Management**

Subject Name	IT LAB -2	Subject Code	KMBN251
Session & Semester	2022-23&II	<b>Faculty Name</b>	Dr. Prateek Gupta

### Table 1 Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
	After completion of the course, the student will be able to	(BL)	(KC)
CO1	Apply the knowledge of pivot tables.	Apply BL 3	Conceptual & Procedural
CO2	Evaluate the knowledge of validating & auditing techniques	Evaluate BL 5	Conceptual & Procedural
CO3	Analyze the different charting techniques in MS Excel	Analyze BL 4	Conceptual & Procedural

### Table CO - PO/APO/PSO Matrix

Course Outcomes	Program Outcomes (POs)					Additional Program Outcomes APOs		
(003)	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2	
CO1	2	1	1	1	2	1	-	
CO2	1	1	1	1	1	2	-	
CO3	1	2	2	1	2	1	1	
PO / APO Target (Avg)	1.33	1.33	1.33	1	1.66	1.33	0.33	

# **KIET School of Management**

Subject Name	ETIGBE	Subject Code	KMBN401
Session & Semester	2022-23 & IV	Faculty Name	Dr. Prateek Gupta

	COS with DLS & KCS		
CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After	completion of the course, the student will be able to	Process Level (BL)	(KC)
CO1	Examine International Business in the wake of	Apply	Conceptual &
COI	Industry 4.0	BL 3	Procedural
CO2	Analyze the new technologies that are driving	Analyze	Conceptual &
C02	change in business operations and strategy	BL 4	Procedural
$CO^{2}$	Analyze shifts in economic thought and its impact on	Analyze	Conceptual &
COS	business decisions	BL 4	Procedural
CO4	Evaluate changing geopolitics and its impact on	Evaluate	Conceptual &
CO4	international Business	BL 5	Procedural
COF	Assess issues and challenges in the Global World	Evaluate	Conceptual &
CUS	and find sustainable solutions	BL 5	Procedural

### COs with BLs & KCs

Course Outcomes (COs)	Р	rogramn	ne Outco	Additional Programme Outcomes APOs			
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	3	2	2	3	2	1	2
CO2	2	2	1	3	1	-	2
CO3	2	3	1	3	1	-	2
CO4	2	2	1	3	1	-	2
CO5	3	1	1	3	1	1	2
PO / APO Target (Avg)	2.4	2	1.2	3	1.2	1	2

### **KIET School of Management**

Subject Name	HR Analytics	Subject Code	KMBHR03
Session & Semester	2022-23 <b>&amp;IV</b>	Faculty Name	Dr Shivani Agarwal

COs v	vith <b>H</b>	BLs &	c KCs
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CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After	completion of the course, the student will be able to	Process Level (BL)	(KC)
CO1	Apply HR Analytical tools and techniques for	Apply	Conceptual &
	decision making.	BL 3	Procedural
CO2	Evaluate the demand forecasting and selection	Evaluate	Conceptual &
	models of HR.	BL 5	Procedural
CO3	Analyze the performance analysis and compensation system.	Analyze BL 4	Conceptual & Procedural
CO4	Evaluate the impact of interventions for formulating	Evaluate	Conceptual &
	responsible investments in HR.	BL 5	Procedural
CO5	Design the HR Metrics and HR Dashboards	Create	Meta-
		BL 6	Cognitive

Course Outcomes (COs)	Program Outcomes (POs)			Additional Progr APO	am Outcomes s		
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	2	1	1	1	2	1	-
CO2	1	1	1	1	1	2	-
CO3	1	2	2	1	2	1	1
CO4	2	2	1	2	2	2	2
CO5	2	3	1	2	2	2	2
PO / APO Target (Avg)	1.6	1.8	1.2	1.4	1.8	1.6	1

# **KIET School of Management**

Subject Name	Performance & Reward Management	Subject Code	KMBNHR04
Session & Semester	2022-23 & IV	Faculty Name	Dr. Puja Roshani

	COs with BLs & KCs						
CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge				
After comp	pletion of the course, the student will beable to	Process Level(BL)	Category (KC)				
CO1	Apply the Performance Management methods.	Apply (BL 3: Apply)	Conceptual and Procedural				
CO2	Analyze the 360 degree Performance appraisal, performance feedback & counselling methods.	Analyze (BL4:Analyze)	Conceptual and Procedural				
CO3	Analyse Balance score card for career development and succession planning.	Analyze (BL4: Analyze)	Conceptual and Procedural				
CO4	Evaluate the employee competency for effective reward systems in the organization.	Evaluate (BL5: Evaluate)	Conceptual and Procedural				
CO5	Evaluate employment and associated reward system.	Evaluate (BL5: Evaluate)	Conceptual and Procedural				

Course Outcomes (COs)	Programme Outcomes (POs)					Additional Outcomes	Additional Programme OutcomesAPOs	
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2	
CO1	3	1	1	1	1	-	-	
CO2	1	2	-	1	2	-	-	
CO3	1	2	1	2	2	1	-	
CO4	1	1	0	1	2	1	-	
CO5	1	2	-	1	2	1	-	
PO / APO Target	1.4	1.6	1	1.2	1.8	1	-	
(Avg)								

# **KIET School of Management**

Subject Name	IHRM	Subject Code	KMBNHRO5
Session & Semester	2022-23 & IV	Faculty Name	Ms. Sapna Yadav

#### COs with BLs & KCs

S.N O	COURSE OUTCOME	Blooms' Cognitive Process (BL)	Knowledge Category (KC)				
After Completion of course, the student will be able to:							
CO 1	Analyze the workforce diversity in contexts with International HRM.	BL4(Analyze)	Conceptual and Procedural				
CO 2	Apply the knowledge about the HR Processes in International Context	BL3(Apply)	Conceptual and Procedural				
CO 3	Evaluate the impacts of Globalization on HRM	BL5(Evaluate)	Conceptual and Procedural				
CO 4	Create the desired level of expertise on organizational level	BL6 (Create)	Conceptual and Procedural				
CO 5	Apply the International culture in SHRM	BL3 (Apply)	Conceptual and Procedural				

	PO-1	PO-2	PO-3	PO-4	PO-5	APO-1	APO-2
CO-1	1	1	-	1	-	-	1
CO-2	1	2	1	1	1	-	1
СО-3	1	2	-	1	-	1	-
CO-4	1	1	2	1	1	-	-
CO-5	1	1	1	1	1	1	1
Average	1	1.40	1.33	1	1	1	1

# **KIET School of Management**

Subject Name	B2B & Service	Subject Code	KMBNMK03
	Marketing		
Session &	2022-23 <b>-4th</b>	Faculty Name	Dr. Binkey
Semester			Srivastava

### COs with BLs & KCs

CO No.Statement of Course OutcomeAfter completion of the course, the student will be able to		Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	Apply the strategic tools in B2B marketing	Applying BL 3	Conceptual
CO2	Apply the IMC and distribution strategies in B2B marketing	Applying BL 3	Procedural
CO3	Analyze various aspects of price setting in B2B markets	Analyzing BL 4	Procedural
CO4	Assess service standards and design	Evaluate BL 5	Meta- Cognitive
CO5	Evaluate service performance for excellence.	Evaluate BL 5	Meta- Cognitive

Course Outcomes (COs)	Programme Outcomes (POs)			Additional Programme Outcomes APOs			
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	2	2		1	2		
CO2	2	2		2	1		
CO3	2	3		2	2		
CO4	2	2	1	2	2	2	1
CO5	2	2		3	2	1	
PO / APO Target (Avg)	2	2.2	1	2	1.8	1.5	1

#### **KIET School of Management**

Subject Name	Sales and Retail Management	Subject Code	KMBNMK04
Session & Semester	2022-23 & IV	Faculty Name	Dr. Mrinal Verma

#### CO Bloom's Knowledge **Statement of Course Outcome** Cognitive No. Category Process (KC) After completion of the course, the student will be able to Level (BL) Apply the skills in Sales management process. CO1 Applying Procedural BL 3 CO2 Illustrate various Sales management strategies Applying Procedural BL 3 CO3 Analyze various management tools on leadership skill. Analyzing Procedural BL 4 Assess the local and global organizational decision in CO4 Evaluate Meta-Retail Management. BL 5 Cognitive Evaluate the retail store formats and it's operations. CO5 Evaluate Meta-BL 5 Cognitive

Course Outcomes	Programme Outcomes (POs)					Additional Programme OutcomesAPOs	
(COS)	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	1	2	1	1	1		
CO2	1	2	1	1	1		
CO3	1	1	2	1	1	1	
CO4	1	1	1	2	1	1	1
CO5	1	1		1	1	1	
PO / APO Target (Avg)	1	1.4	1	1.2	1	1	1

#### COs with BLs & KCs

### **KIET School of Management**

Subject Name	SMWA	Subject Code	KMBNMK05
Session & Semester	2022-23 & IV	Faculty Name	Dr. Deepa

COS WITH BLS & KCS						
CO No	Statement of Course Outcome	Bloom's Cognitive	Knowledge			
After	completion of the course, the student will be able to	Process Level (BL)	Category (KC)			
CO1	Examine the social media and web analytics platform	Apply BL 3	С, Р			
CO2	Analyze Social network and Web Analytics Fundamentals	Analyze BL 4	С, Р			
CO3	Analyze Matrices and Web Analytics tool	Analyze BL 4	С, Р			
CO4	Evaluate Facebook and Google Analytics	Evaluate BL 5	С, Р			
CO5	Assess web analytics strategies for effective decision alternatives in social media operations	Evaluate BL 5	С, Р			

# COs with BLs & KCs

Course Outcomes (COs)	Programme Outcomes (POs)				Additional Programme Outcomes APOs		
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	3	2	-	1	1	-	1
CO2	3	2	-	1	1	-	1
CO3	1	3	-	1	1	1	1
CO4	1	3	-	1	1	1	2
CO5	1	3	-	1	1	2	2
PO / APO Target (Avg)	1.8	2.6	-	1	1	1.33	1.4

# **KIET School of Management**

Subject Name	FD	Subject Code	KMBN FM03
Session & Semester	2022-23 & IV	Faculty Name	Ms. Punjika Rathi

	COS WITH DLS & KCS		
CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After	completion of the course, the student will be able to	Process Level (BL)	(KC)
CO1	Understand different types of Derivatives and	Understand	Conceptual &
COI	Hedging.	BL 2	Procedural
CO2	Analyze & Apply Forward & Futures for hedging	Analyze	Conceptual &
	purposes.	BL 4	Procedural
CO3	Evaluate the impact of Options contracts as a	Evaluate	Conceptual &
COS	hedging tool.	BL 5	Procedural
CO4	Illustrate & Assess Swaps and their use	Analyze	Conceptual &
CO4	musuale & Assess Swaps and men use.	BL 4	Procedural

### COs with BLs & KCs

Course Outcomes (COs)	Programme Outcomes (POs)			Additional Pr Outcor APO	rogramme nes s		
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	1	2	1	2	1	-	1
CO2	1	2		2		-	1
CO3	1	2		2		-	1
CO4	1	2		2		-	1
PO / APO Target (Avg)	1	2	1	2	1	-	1

# **KIET School of Management**

Subject Name	FERM	Subject Code	KMBN FM04
Session & Semester	2022-23 & IV	Faculty Name	Dr. Prateek Gupta

	COS WITH DLS & KCS		
CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge
After o	completion of the course, the student will be able to	Process Level (BL)	(KC)
CO1	Examine the BOP and various exchange rate system	Apply BL 3	Conceptual & Procedural
CO2	Analyze the theories of exchange rate determination	Analyze BL 4	Conceptual & Procedural
CO3	Analyze the foreign exchange transactions mechanism	Analyze BL 4	Conceptual & Procedural
CO4	Evaluate the exchange dealings	Evaluate BL 5	Conceptual & Procedural
CO5	Assess various foreign exchange risks and its management	Evaluate BL 5	Conceptual & Procedural

### COs with BLs & KCs

Course Outcomes (COs)	Programme Outcomes (POs)				Additional Pr Outcor APO	ogramme nes s	
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	2	3	-	3	1	-	2
CO2	3	3	-	3	1	-	2
CO3	2	3	-	3	1	-	2
CO4	2	3	-	3	1	-	2
CO5	2	3	-	3	1	-	2
PO / APO Target (Avg)	2.2	3	-	3	1	-	2

# **KIET School of Management**

Subject Name FCRA		Subject Code	KMBN FM 05	
Session & Semester	2022-23 & IV	Faculty Name	Dr. Puja Roshani	

### Table 10 Tagging COs with BLs & KCs

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After c	completion of the course, the student will be	<b>Process Level</b>	( <b>KC</b> )
	able to	( <b>BL</b> )	
COL	Examine about various types of financial	Apply	Conceptual &
COI	credit.	BL 3	Procedural
CO2	Examine the gradit rick and its rating	Apply	Conceptual &
02	Examine the credit fisk and its fatting.	BL 3	Procedural
CO3	Analyze credit commitments and its	Analyze	Conceptual &
COS	application	BL 4	Procedural
CO4	Evaluation of risk management and	Evaluate	Conceptual &
04	corporate governance.	BL 5	Procedural
COS	Measure riskiness of a stock or a portfolio	Evaluate	Conceptual &
005	position.	BL 5	Procedural

### Table 11 CO - PO/APO/PSO Matrix

Course Outcomes (COs)	Programme Outcomes (POs)				Additional Pr Outcor APO	ogramme nes s	
	PO1	PO1 PO2 PO3 PO4 PO5				APO 1	APO 2
CO1	2	2	-	2	2	1	1
CO2	3	3	-	2	2	1	1
CO3	2	3	-	2	2	1	1
CO4	3	3	-	2	2	1	1
CO5	3	3	-	3	1	1	1
PO / APO Target (Avg)	2.6	2.8	-	2.2	1.8	1	1
#### **KIET School of Management**

Subject Name	Database	Subject Code	(KMBNIT-03)
	Management System		
Session & Semester	2022-23 & IV	Faculty Name	Ms. Neelam Rawat

#### Outcome Bloom's CO No. **Statement of Course Outcome** Cognitive Relevant Knowledge POs/ Category After completion of the course, the student will be APOs Process (KC) able to Level (**BL**) **CO1** PO1, PO2 F, C, P Understand concept of DBMS and ER BL2 Models for efficient Database Design **Interpret** solutions to a query problem CO2 using SQL commands, Relational Algebra PO1 BL3 F, C, P and Calculus Use Normalization concept to normalize a PO1, PO2 CO3 BL3 F, C, P given Relation to the desired Normal Form **Describe** need of transaction processing, **CO4** recovery mechanism from transaction PO1, PO2 BL2 F, C, P failures and concurrency control techniques **Summarize** various type of DBMS CO5 architectures and Databases of current PO1, PO2 BL2 F, C trends.

Tagging COs with BLs & KCs

Course Outcomes		Program Outcomes (POs)				APOs	
(COs)	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	3	2					
CO2	2						
CO3	2	2					
CO4	2	2					
CO5	1	3					
PO / APO Target	2	2.25					
(Avg)							

#### <u>Course</u> Dutcome

# **KIET School of Management**

Subject Name	ССВ	Subject Code	KMBNIT04
Session & Semester	2022-23 & IV	Faculty Name	Dr. Amit Kumar

	Outcome		
CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category
After comp	pletion of the course, the student will be able to	Process Level (BL)	(KC)
CO1	Describe the main concepts, key technologies, strengths, and limitations of cloud computing.	BL2	F, C, P
CO2	Characterize the enabling technologies that help in the development of cloud.	BL4	F, C, P
CO3	Differentiate the architecture cloud, service, and delivery models.	BL4	F, C, P
CO4	Justify the core issues of cloud computing like cloud virtualization	BL5	F, C, P
CO5	Figure out the emergence of cloud as the next generation computing paradigm.	BL4	F, C, P

#### <u>Course</u> Jutcome

### COs with BLs & KCs

Course Outcomes		Program Outcomes (POs)					APOs	
(COs)	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2	
CO1		3			3			
CO2		3			3			
CO3		3			3			
CO4		3						
CO5		3			3			
PO / APO Target (Avg)		3			3			

## **KIET School of Management**

Subject Name	Business Data Warehousing & Data Mining	Subject Code	KMBN IT05
Session & Semester	2022-23 & IV	Faculty Name	Siddheshwari Dutt Mishra

### **Course Outcomes**

CO No.	Statement of Course Outcome		Bloom's	
After completion of the course, the student will be able to		Relevant POs/ APOs	Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	Explain the need and fundamentals of data warehousing.	PO1	2	C, F
CO2	Illustrate the functioning and visualization of Data Warehousing tools.	PO1, PO2, PO4, APO1	3	С
CO3	Understand the design and principle of data mining.	PO1	2	C, F
CO4	Apply data mining tools for solving real world problem	PO1, PO2, PO4, APO1, APO2	3	C, F
CO5	Compare algorithms used in information analysis of data mining techniques.	PO1, PO2, APO2	4	С, Р

#### **CO - PO/APO Mapping**

Course Outcomes	Program Outcomes (POs)				APOs		
(COs)	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	3						
CO2	3	1		1		2	
CO3	3						
CO4	3	2		2		2	1
CO5	3	2					1
PO / APO Target (Avg)	3	1.67		1.5		2	1

## **KIET School of Management**

Subject Name	QM	Subject Code	KMBN OM 03
Session & Semester	2022-23 & IV	Faculty Name	Dr. Meenakshi Tyagi

	Table 12 Tagging COs with BLs & KCs							
CO No.	Statement of Course Outcome	Bloom's Cognitivo	Knowledge					
After completion of the course, the student will be able to		Process Level (BL)	Category (KC)					
CO1	Examine the quality dimensions and its	Apply	Conceptual&					
COI	importance	BL 3	Procedural					
CO2	Examine the techniques of quality control and its importance for organizational competitiveness	Apply BL 3	Conceptual & Procedural					
CO3	Analyze impacts of Quality Control tools in	Analyze	Conceptual &					
005	the organization.	BL 4	Procedural					
CO4	Evaluate of the International and Indian	Evaluate	Conceptual &					
04	Quality Control Standards	BL 5	Procedural					
CO5	Evaluate Competency to use statistical	Evaluate	Conceptual &					
0.05	methods for process quality control	BL 5	Procedural					

### Table 13 CO - PO/APO/PSO Matrix

Course Outcomes (COs)	Programme Outcomes (POs)				Additional Programme Outcomes APOs		
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	2	1	-	1	1	1	1
CO2	2	2	1	1	2	1	1
CO3	2	2	1	1	2	2	2
CO4	2	2	1	1	2	1	1
CO5	2	2	-	2	2	1	1
PO / APO Target (Avg)	2	1.8	1	1.2	1.8	1.2	1.2

# **KIET School of Management**

Subject Name	PSM	Subject Code	KMBN OM 04
Session & Semester	2022-23 & IV	Faculty Name	Dr. Sapna Yadav

CO No.	Statement of Course Outcome	Bloom's Cognitive	Knowledge Category (KC)	
After co	ompletion of the course, the student will be able to	Process Level (BL)		
CO1	Apply knowledge about the	Apply	Conceptual &	
	procurement and sourcing management	BL 3	Procedural	
CO2	Examine the processes of sourcing	Apply	Conceptual &	
	management	BL 3	Procedural	
CO3	Analyze the Competency to vendor	Analyze	Conceptual &	
	selection and rating	BL 4	Procedural	
CO4	Evaluating the process of initiating &	Evaluate	Conceptual &	
	executing the project.	BL 5	Procedural	
CO5	Evaluation of project scheduling &	Evaluate	Conceptual &	
	network analysis.	BL 5	Procedural	

#### COs with BLs & KCs

#### CO - PO/APO/PSO Matrix

Course Outcomes (COs)	Programme Outcomes (POs)				Additional Programme Outcomes APOs		
	PO1	PO2	PO3	PO4	PO5	APO 1	APO 2
CO1	2	2		2	1	1	1
CO2	3	2		1	1	1	1
CO3	2	1	1	1	1	1	1
CO4	2	1	2	1	1	1	1
CO5	2	1	2	1	1	1	1
PO / APO Target (Avg)	2.2	1.4	1.67	1.2	1	1	1

# **KIET School of Management**

Subject Name	MMS	Subject Code	KMBN OM 05		
Session & Semester	2022-23 & IV	Faculty Name	Ms. Sapna Yadav		

COS with BLs & KCs						
S.N O	COURSE NAM	Blooms' Cognitive Process (BL)	Knowledge Category (KC)			
After Completion of course, the student will be able to:						
CO 1	Apply the different Manufacturing System.	BL3(Apply)	Conceptual and Procedural			
CO 2	Plan the manufacturing processes/ support systems of manufacturing.	BL3(Apply)	Conceptual & Procedural			
CO 3	Analyze sustainable and green manufacturing practices.	BL4(Analyze)	Conceptual and Procedural			
CO 4	Analyze the various capacity planning strategies.	BL4(Analyze)	Conceptual and Procedural			
CO 5	Evaluate various tools for maintenance system	BL5(Evaluate)	Conceptual and Procedural			

	PO-1	PO-2	PO-3	PO-4	PO-5	APO-1	APO-2
CO-1	2	2	-	1	2	1	-
СО-2	1	2	-	2	1	1	-
CO-3	1	2	2	2	1	1	1
CO-4	1	2	-	2	1	1	1
CO-5	1	2	-	2	2	1	1
Average	1.5	2	2	1.8	1.4	1	1