

Department of CSE(AI&ML)

CO/PO Mapping

Odd Semester

Sem: III

Session-2023-24

SEMESTER –III

SN	Subject Code	Subject	Type	Category	Periods			Sessional Component		Sessional (SW) (TS/PS)	End Semester Examination (ESE)	Total SW+ESE	Credit Cr
					L	T	P	CT	TA				
1	BOE3** / BAS303	Science Based Open Elective/BSC (Maths-III/Math IV/ Math V)	T	ES/BS	3	1	0	20	10	30	70	100	4
2	BVE301 / BAS301	Universal Human Value and Professional Ethics/ Technical Communication	T	VA/HS	2	1	0	20	10	30	70	100	3
3	BCS301	Data Structure	T	PC	3	1	0	20	10	30	70	100	4
4	BCS302	Computer Organization and Architecture	T	PC	3	1	0	20	10	30	70	100	4
5	BCS303	Discrete Structures & Theory of Logic	T	PC	2	1	0	20	10	30	70	100	3
6	BCS351	Data Structure Lab	P	PC	0	0	2		50	50	50	100	1
7	BCS352	Computer Organization and Architecture Lab	P	PC	0	0	2		50	50	50	100	1
8	BCS353	Web Designing Workshop	P	PC	0	0	2		50	50	50	100	1
10	BCC301 / BCC302	Cyber Security/Python programming	T	VA	2	0	0	20	10	30	70	100	2
11	BCC351	Internship Assessment /Mini Project*	P							100		100	2
		Total			15	5	6						25

- **Mathematics –III** for CE / ENV and allied branches
- **Mathematics-IV** for Computer/Electronics/Electrical & allied Branches, Mechanical & Allied Branches Textile/Chemical & allied Branches
- **Mathematics-V** for Bio Technology / Agriculture Engineering

Department of CSE (AI&ML)

Program Name: B.Tech

Academic Session: 2023-24

Year: 2023

Semester: III


Course Name: Math-IV

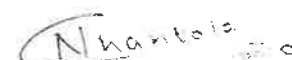
Course Code: BAS-303

Course Coordinator Name: Dr. Neelam Chantola

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Solve partial differential equations using Lagrange's method, Charpit method and other particular methods.	PO1, PO2, PO12	3	C & P
CO2	Apply the method of separation of variables to solve the Wave, Heat and Laplace equation. Application of Fourier transform	PO1, PO2, PO3, PO12	3	C & P
CO3	Determine moments, correlation, linear regression lines and obtain best fitting curves to the given data.	PO1, PO2, PO3, PO4, PO5, PO12	3	C & P
CO4	Apply the concepts of probability to solve discrete and continuous probability problems.	PO1, PO2, PO3, PO4, PO5, PO12	3	C & P
CO5	Apply the theory of sampling to solve t-test, Z-Test, Chi square test problems and compute the control charts for variable and attributes.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO 12	3	C & P

Faculty Members Teaching the Course	Signature
1. Dr. Neelam Chantola	


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 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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE (AI&ML)

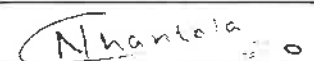
Program Name: B.Tech
Course Name: Math-IV

Academic Session: 2023-24
Course Code: BAS-303

Year: 2023
Course Coordinator Name: Dr. Neelam Chantola

CO - PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	2	-	-	-	-	-	-	-	-	-	2	1	1
CO2	2	2	2	-	-	-	-	-	-	-	-	2	1	1
CO3	2	2	2	2	2	-	-	-	-	-	-	2	1	1
CO4	2	2	1	1	1	-	-	-	-	-	-	1	1	1
CO5	2	1	2	2	2	2	2	-	-	-	-	2	1	1
PO Target	2	1.8	1.75	1.67	1.67	2	2	-	-	-	-	1.8	1	1

Faculty Members Teaching the Course	Signature
I. Dr. Neelam Chantola	



Signature of Course Coordinator



Assoc./ Asst. Head DOC



Signature of Addl. HoD



Signature of HoD

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE (AI&ML)

Program Name: B.Tech

Academic Session: 2023-24 Year: 2023

Semester: III


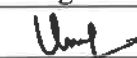
Course Name: Universal Human Values

Course Code: BVE-301

Course Coordinator Name: Ms. Umang Kant

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Understand the need and process of value education, comparison between values & skill, the meaning of happiness and prosperity.	PO6, PO7, PO8	2	F, C
CO2	Analyze the Harmony in the Self "the Co-existence of Self and Body"	PO6, PO7, PO8	4	F, C
CO3	Understand the value of harmonious relationship based on trust, respect, and other naturally acceptable feelings in human-human relationships	PO6, PO7, PO8	2	F, C
CO4	Analyze the harmony in nature, mutually fulfilling and participation in the nature.	PO6, PO7, PO8	4	F, C
CO5	Decide the role of holistic understanding of harmony on professional ethics.	PO6, PO7, PO8	5	F, C

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Kavya Gupta		2. Ms. Umang Kant	

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).

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE (AI&ML)

Program Name: B.Tech

Academic Session: 2023-24 Year: 2023

Semester: III



Course Name: Universal Human Values

Course Code: BVE-301

Course Coordinator Name: Ms. Kavya Gupta

CO-PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	-	-	-	-	2	2	3	1	1	1	1	-	-
CO2	-	-	-	-	-	2	2	3	1	1	1	1	-	-
CO3	-	-	-	-	-	2	2	3	1	1	1	1	-	-
CO4	-	-	-	-	-	2	2	3	1	1	1	1	-	-
CO5	-	-	-	-	-	2	2	3	1	1	1	1	-	-
POTarget	-	-	-	-	-	2	2	3	1	1	1	1	-	-

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Kavya Gupta		2. Ms. Umang Kant	


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).

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE (AI&ML)

Program Name: B.Tech

Academic Session: 2023-24 Year: 2023

Semester: III

Course Name: Data Structure

Course Code: BCS-301

Course Coordinator Name: Dr. Shelly Gupta

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/PSOs/ APOs	Revised Bloom's Level (B L)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Understand the concept of memory allocation and using it for array and linked list data structures.	PO1, PO2, PSO1	2	C
CO2	Apply the concept of stack and queue in finding solutions of real-world problems.	PO1, PO2, PO4, PSO1	3	P
CO3	Assess the searching and sorting algorithms, and recommend the best suited algorithm based on the given scenario.	PO1, PO2, PO3, PO4, PO5, PO6, PSO1	3	P
CO4	Contrast the role of Graph as non linear data structure and find the solutions of the problems using Graph based algorithm.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO12, PSO1	4	P
CO5	Analyze the tree data structure and its variants applying these concepts for problem solving.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO11, PO12, PSO1	4	P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Dr. Shelly Gupta		2. Mr. Purshottam Trivedi	



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 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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE (AI&ML)

Program Name: B.Tech

Academic Session: 2023-24 Year: 2023

Semester: III

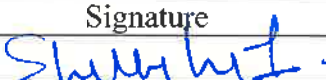

Course Name: Data Structure

Course Code: BCS-301

Course Coordinator Name: Dr. Shelly Gupta

CO-PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	3	3	-	-	-	-	2	2	3	3	3	-
CO2	3	3	3	3	-	-	-	-	2	2	3	3	3	-
CO3	3	3	3	3	-	-	-	-	2	2	3	3	3	-
CO4	3	3	3	3	-	-	-	-	2	2	3	3	3	-
CO5	3	3	3	3	-	-	-	-	2	2	3	3	3	-
POTarget	3	3	3	3	-	-	-	-	2	2	3	3	3	-

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Dr. Shelly Gupta		Mr. Purshottam Trivedi	


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 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

Department of CSE (AI&ML)

Program Name: B.Tech

Academic Session: 2023-24 Year: 2023

Semester: III

Course Name: Computer Organization and Architecture Course Code: BCS-302 Course Coordinator Name: Ms. Bhawna

Course Outcomes


After completion of the course, the student will be able to		Relevant POs/PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Describe the fundamental components of basic computer system and its organization.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	2	P, C
CO2	Apply arithmetic and logical microoperations on binary number system	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	3	P, C
CO3	Analyze control unit design and concept of pipelining	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	4	P, C
CO4	Examine memory hierarchy and numerical problem	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	4	P, C
CO5	Analyze the concept of input output organization.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	4	P, C

Faculty Members Teaching the Course	Signature
1. Ms. Bhawna	


Signature of Course Coordinator


Assoc. Asst. Head DOC


Signature of Addl. HoD


Signature of HoD

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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE (AI&ML)

Program Name: B.Tech

Academic Session: 2023-24 Year: 2023

Semester: III

Course Name: Computer Organization and Architecture Course Code: BCS-302 Course Coordinator Name: Ms. Bhawna

CO-PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	2	2	2	-	-	-	-	-	2	-	2	-
CO2	3	2	2	2	2	-	-	-	-	-	2	-	2	-
CO3	2	2	2	2	2	-	-	-	-	-	2	-	2	-
CO4	3	2	2	2	2	-	-	-	-	-	2	-	2	-
CO5	2	2	2	2	2	-	-	-	-	-	2	-	2	-
POTarget	2.6	2	2	2	2	-	-	-	-	-	2	-	2	-

Faculty Members Teaching the Course	Signature
I. Ms. Bhawna	


Signature of Course Coordinator


Assoc./ Asst. Head DOC


Signature of Addl. HoD


Signature of HoD

Department of CSE (AI&ML)

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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE (AI&ML)

Program Name: B.Tech

Academic Session: 2023-24 Year: 2023

Semester: III

Course Name: Discrete Structures & Theory of Logic Course Code: BCS-303

Course Coordinator Name: Ms. Kavya Gupta

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Acquire Knowledge of sets, relations, and their properties.	PO1, PO2, PSO1	2	C, P
CO2	Apply fundamental concepts of functions and Boolean algebra.	PO1, PO2, PSO1	3	C, P
CO3	Employ the rules of propositions and predicate logic to solve the logical problems.	PO1, PO2, PO3, PO10, PO12, PSO1	3	C, P
CO4	Explore the concepts of group theory and their applications.	PO1, PO2, PO3, PO4, PO12, PSO1	4	C, P
CO5	Illustrate the principles and concepts of graph theory.	PO1, PO2, PO3, PO4, PO10, PO12, PSO1	3	C, P

Faculty Members Teaching the Course	Signature
1. Ms. Kavya Gupta	


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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Program Name: B.Tech

Academic Session: 2023-24 Year: 2023

Semester: III

Course Name: Discrete Structures & Theory of Logic Course Code: BCS-303

Course Coordinator Name: Ms. Kavya Gupta

CO-PO/PSO/APOMatrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	-	-	-	-	-	-	-	-	-	-	2	-
CO2	2	2	-	-	-	-	-	-	-	-	-	-	2	-
CO3	3	2	2	-	-	-	-	-	-	2	-	2	2	-
CO4	3	2	2	3	-	-	-	-	-	-	-	2	2	-
CO5	3	2	3	2	-	-	-	-	-	2	-	2	2	-
POTarget	2.8	2	2.3	2.5	-	-	-	-	-	2	-	2	2	-

Faculty Members Teaching the Course	Signature
1. Ms. Kavya Gupta	


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

Department of CSE (AI&ML)

Program Name: B.Tech

Academic Session: 2023-24 Year:2023

Semester: III


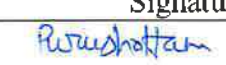
CourseName:Data Structure Lab

CourseCode:BCS-351

Course Coordinator Name:Dr. Shelly Gupta

CourseOutcomes

After completion of the course, the student will be able to		RelevantPOs/PSOs/ APOs	Revised Bloom'sLevel (BL)	KnowledgeCategory (KC)
CONo.	StatementofCourseOutcome			
CO1	Implement linear data structures Array, linked lists, stack, Queue, and their operations.	PO1, PO2 PO3, PO4, PO5, PO9, PO10, PO11 PO12, PSO2	5	C
CO2	Develop programs for sorting and searching algorithms using relevant data structures.	PO1, PO2 PO3, PO4, PO5, PO10, PO11 PO12, PSO2	4	F
CO3	Develop programs for implementing non-linear data structure trees, graphs, and their traversal operations.	PO1, PO2 PO3, PO4, PO5, PO10, PO11 PO12, PSO2	5	C

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Dr. Shelly Gupta		2.Mr. Purshottam Trivedi	


Signature of CourseCoordinator


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).

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Department of CSE (AI&ML)

Program Name: B.Tech

Academic Session: 2023-24 Year: 2023

Semester: III



Course Name: Data Structure Lab

Course Code: BCS-351

Course Coordinator Name: Dr. Shelly Gupta

CO-PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	3	3	2	-	-	-	3	2	3	3	-	3
CO2	3	3	3	3	2	-	-	-	3	2	3	3	-	3
CO3	3	3	3	3	2	-	-	-	3	2	3	3	-	3
POTarget	3	3	3	3	2	-	-	-	3	2	3	3	-	3

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Dr. Shelly Gupta		2. Mr. Purshottam Trivedi	


Signature of Course Coordinator


Assoc./ Asst. Head DOC


Signature of Addl. HoD


Signature of HoD

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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name: B.Tech

Academic Session: 2023-24

Year: 2023

Semester: III


Course Name: Computer Organization and Architecture Lab

Course Code: BCS-352

Course Coordinator Name: Ms. Bhawna

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Design the table of Half adder and subtractor and implement it by using logic gates.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	3	C, P
CO2	Convert and implement binary values to gray value and revert it by using gates.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	3	C, P
CO3	Draw the block diagram of Multiplexers and Decoders, verify their output by changing the selection inputs, and also verify the excitation tables of various flip-flops.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	3	C, P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Bhawna			


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 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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name: B.Tech

Academic Session: 2023-24

Year: 2023

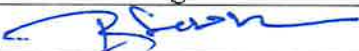
Semester: III

Course Name: Computer Organization and Architecture Lab Course Code: BCS-352

Course Coordinator Name: Ms. Bhawna

CO - PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	2	2	3	3	-	-	-	-	-	-	3	3	-
CO2	2	2	2	2	3	-	-	-	-	-	-	3	2	-
CO3	2	2	2	2	3	-	-	-	-	-	-	3	3	-
PO Target	2	2	2	2.4	3	-	-	-	-	-	-	3	2.7	-

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Ms. Bhawna			



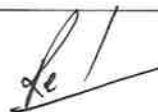
Signature of Course Coordinator



Assoc./ Asst. Head DOC



Signature of Addl. HoD



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Department of CSE (AI&ML)

Program Name: B.Tech

Academic Session: 2023-24 Year:2023

Semester: III

CourseName: Web Designing Workshop

CourseCode: BCS-353 Course Coordinator Name:Ms. Chanchal

CourseOutcomes

After completion of the course, the student will be able to		RelevantPOs/PSOs/ APOs	Revised Bloom'sLevel(BL)	KnowledgeCategory(KC)
CONo.	StatementofCourseOutcome			
CO1	Design web content using HTML and CSS, producing visually appealing and responsive web pages.	PO1, PO9, PO11, PO12, PSO1	3	C, P
CO2	Apply JavaScript to add interactivity and dynamic functionality to websites, culminating in the development of single-page applications (SPAs) with React.	PO1, PO3, PO9, PO11 PO12, PSO1	3	C, P
CO3	Design modern web projects, demonstrating their ability to follow best practices and adapt to evolving industry standards.	PO1, PO3, PO9, PO11 PO12, PSO1	3	C, P

Faculty Members Teaching the Course	Signature
1. Ms. Chanchal	


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

Academic Session: 2023-24 Year:2023

Semester: III

CourseName: Web Designing Workshop

CourseCode: BCS-353 Course Coordinator Name:Ms. Chanchal

CO-PO/PSO/APOMatrix

CO No.	ProgrammeOutcome(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	-	-	-	-	-	-	-	1	-	2	1	3	-
CO2	3	-	2	-	-	-	-	-	1	-	2	1	3	-
CO3	3	-	2	-	-	-	-	-	1	-	2	1	3	-
POTarget	3	-	2	-	-	-	-	-	1	-	2	1	3	-

Faculty Members Teaching the Course	Signature
1. Ms. Chanchal	


Signature of CourseCoordinator


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

Academic Session: 2023-24 Year:2023

Semester: III

CourseName: Python Programming CourseCode: BCC-302

Course Coordinator Name: Dr. Abha Kiran Rajpoot

CourseOutcomes

After completion of the course, the student will be able to		RelevantPOs/PSOs/ APOs	Revised Bloom'sLevel(BL)	KnowledgeCategory(KC)
CONo.	StatementofCourseOutcome			
CO1	Interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements.	PO1, PO2, PSO2	2	C
CO2	Express proficiency in the handling of strings and functions	PO1, PO2, PO4, PSO2	4	P
CO3	Determine the methods to create and manipulate Python programs by utilizing the data structures like lists, dictionaries, tuples, and sets.	PO1, PO2, PO3, PO4, PO5, PO6, PSO2	3	C
CO4	Identify the commonly used operations involving file systems and regular expressions.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO12, PSO2	4	P
CO5	Articulate the Object-Oriented Programming concepts such as encapsulation, inheritance and polymorphism as used in Python	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO11, PO12, PSO2	4	C

Faculty Members Teaching the Course	Signature
1. Dr. Abha Kiran Rajpoot	

 Signature of CourseCoordinator

 Assoc./ Asst. Head DOC

 Signature of Addl. HoD

 Signature of HoD

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

- ❖ 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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE (AI&ML)

Program Name: B.Tech

Academic Session: 2023-24 Year: 2023

Semester: III

Course Name: Python Programming

Course Code: BCC-302

Course Coordinator Name: Dr. Abha Kiran Rajpoot

CO-PO/PSO/APOMatrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	-	-	-	-	-	-	-	-	-	-	-	3
CO2	3	2	-	1	-	-	-	-	-	-	-	-	-	3
CO3	3	3	3	2	3	2	-	-	-	-	-	-	-	3
CO4	3	3	2	2	3	3	2	-	-	-	-	3	-	3
CO5	3	2	3	3	3	3	2	2	2	-	2	3	-	3
POTarget	3	2.4	2.7	2	3	2.7	2	2	2	-	2	3	-	3

Faculty Members Teaching the Course	Signature
1. Dr. Abha Kiran Rajpoot	

 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 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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name: B.Tech

Academic Session: 2023-24

Year: 2023

Semester: III


Course Name: Mini Project/ Internship Assessment

Course Code: BCC-351

Course Coordinator Name: Ms. Bhawna

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Explore potential areas in the field of Computer Science and Engineering (CSE).	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO1, PSO2	2	F
CO2	Compare various existing solutions to challenges in these areas.	PO1, PO2, PO3, PO4, PO5, PO9, PO11, PO12, PSO1, PSO2	5	C
CO3	Demonstrate the ability to work in teams, manage the study's conduct, propose a plan for creating a solution, and report the findings in the chosen domain.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO11, PO12, PSO1, PSO2	4	P

Faculty Members Teaching the Course	Signature
1. Ms. Bhawna	


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 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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name: B.Tech

Academic Session: 2023-24

Year:2023

Semester: III


Course Name: Mini Project/ Internship Assessment

Course Code: BCC-351

Course Coordinator Name: Ms. Bhawna

CO - PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	3	3	3	2	-	-	2	2	2	3	2	2
CO2	3	3	3	3	3	-	-	-	2	-	2	3	2	3
CO3	3	3	3	3	3	1	-	-	3	-	2	2	3	2
PO Target	3	3	3	3	3	1.5	0	0	2.4	2	2	2.7	2.4	2.4

Faculty Members Teaching the Course	Signature
1. Ms. Bhawna	



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)

CO/PO Mapping

Odd Semester

Sem: V

Session-2023-24

B.TECH.**COMPUTER SCIENCE AND ENGINEERING (ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)****CURRICULUM STRUCTURE****SEMESTER- V**

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KCS501	Database Management System	3	1	0	30	20	50		100		150	4
2	KAI501	Artificial Intelligence	3	1	0	30	20	50		100		150	4
3	KCS503	Design and Analysis of Algorithm	3	1	0	30	20	50		100		150	4
4	Dept. Elective-I	Departmental Elective-I	3	0	0	30	20	50		100		150	3
5	Dept. Elective-II	Departmental Elective-II	3	0	0	30	20	50		100		150	3
6	KCS551	Database Management System Lab	0	0	2				25		25	50	1
7	KAI551	Artificial Intelligence Lab	0	0	2				25		25	50	1
8	KCS553	Design and Analysis of Algorithm Lab	0	0	2				25		25	50	1
9	KCS554	Mini Project or Internship Assessment*	0	0	2				50			50	1
10	KNC501/ KNC502	Constitution of India. Law and Engineering / Indian Tradition, Culture and Society	2	0	0	15	10	25		50			
11		MOOCs (Essential for Hons. Degree)											
		Total										950	22

*The Mini Project or internship (4 weeks) conducted during summer break after IV semester and will be assessed during V semester.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE (AI&ML)

Program Name: B.Tech

Academic Session: 2023-24

Year: 2023

Semester: V

Course Name: Database Management System

Course Code: KCS-501

Course Coordinator Name: Dr. Sapna Juneja

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Describe the features of a database system, its languages, keys and relationship among the keys and structuring of ER Diagram	PO1, PO12, PSO1	2	C
CO2	Apply query processing techniques to automate the real time problems of databases.	PO1, PO2, PO3, PO5, PO10, PO11, PO12, PSO1	3	P
CO3	Illustrate the Normalization and its applicability in Database Designing.	PO1, PO10, PO11, PO12, PSO1	3	F, C
CO4	Identify the serializability and recovery and its associated concepts in transaction management.	PO1, PSO1	2	C
CO5	Explain different approaches of Concurrency control and related protocols	PO1, PO12, PSO1	2	C

Faculty Members Teaching the Course	Signature
1. Dr. Sapna Juneja	



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 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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name: B.Tech

Academic Session: 2023-24 Year: 2023

Semester: V

Course Name: Database Management System Course Code: KCS-501 Course Coordinator Name: Dr. Sapna Juneja

CO-PO/PSO/APO Matrix

CO No.	Programme Outcome(PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	-	-	-	-	-	-	-	-	-	-	2	3	-
CO2	2	3	3	-	2	-	-	-	-	3	2	1	3	-
CO3	3	-	-	-	-	-	-	-	-	1	1	1	3	-
CO4	2	-	-	-	-	-	-	-	-	-	-	1	3	-
CO5	2	-	-	-	-	-	-	-	-	-	-	1	3	-
POTarget	2.4	3	3	-	2	-	-	-	-	2	1.5	1.2	3	-

Faculty Members Teaching the Course	Signature
1. Dr. Sapna Juneja	


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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- ❖ 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

Department of CSE(AI&ML)

Program Name: B.Tech

Academic Session: 2023-24 Year: 2023

Semester: V


Course Name: Artificial Intelligence

Course Code: KAI-501

Course Coordinator Name: Dr. Sayani Ghosal

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Understand the fundamental concepts, theories, and techniques in artificial intelligence (AI), and apply diverse approaches for effective problem-solving.	PO1, PO2, PSO2	2	C
CO2	Analyze search techniques and gaming theory.	PO1, PO2, PO4, PSO2	4	P
CO3	Apply knowledge representation techniques and problem-solving strategies to common AI applications.	PO1, PO2, PO3, PO4, PO5, PO6, PSO2	3	P
CO4	Examine the use case of AI in real-world societal problems and Software agents.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO12, PSO2	4	P
CO5	Analyze the applicability of the Artificial Intelligence Approach to develop sustainable solutions using professional ethics.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO11, PO12, PSO2	4	P

Faculty Members Teaching the Course	Signature
1. Dr. Sayani Ghosal	



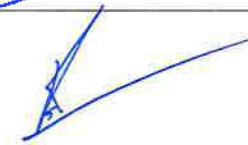
Signature of Course Coordinator



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

Academic Session: 2023-24 Year: 2023

Semester: V


Course Name: Artificial Intelligence

Course Code: KAI-501

Course Coordinator Name: Dr. Sayani Ghosal

CO - PO/PSO/APO Matrix

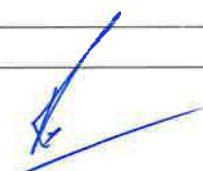
CO No.	Programme Outcome(PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	-	-	-	-	-	-	-	-	-	-	-	3
CO2	3	2	-	1	-	-	-	-	-	-	-	-	-	3
CO3	3	3	3	2	3	2	-	-	-	-	-	-	-	3
CO4	3	3	2	2	3	3	2	-	-	-	-	3	-	3
CO5	3	2	3	3	3	3	2	2	2	-	2	3	-	3
POTarget	3	2.4	2.7	2	3	2.7	2	2	2	-	2	3	-	3

Faculty Members Teaching the Course	Signature
1. Dr. Sayani Ghosal	


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).

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE (AI&ML)

Program Name: B.Tech

Academic Session: 2023-24

Year: 2023

Semester: V

Course Name: Design and Analysis of Algorithm

Course Code: KCS-503

Course Coordinator Name: Mr. Abhishek Kumar

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Analyze running time of algorithms using asymptotic methods.	PO1, PO2, PO3, PO4, PO5, PO9, PO10, PO12, PSO1	3	C, P
CO2	Analyze advanced data structure algorithms to calculate their complexities.	PO1, PO2, PO3, PO4, PO6, PO8, PO9, PO10, PO12, PSO1	3	C, P
CO3	Create solutions of Optimization problems using Greedy Approach.	PO1, PO2, PO3, PO4, PO5, PO6, PO8, PO9, PO10, PO11, PO12, PSO1	3	P, M
CO4	Apply backtracking, branch-bound and dynamic programming approaches for finding efficient solutions.	PO1, PO2, PO3, PO4, PO5, PO6, PO8, PO9, PO10, PO11, PO12, PSO1	3	P, M
CO5	Understand the concepts of NP completeness and find alternate solutions using Randomized and approximation algorithms.	PO1, PO2, PO3, PO4, PO5, PO6, PO8, PO9, PO10, PO11, PO12, PSO1	3	P, M

Faculty Members Teaching the Course	Signature
1. Mr. Abhishek Kumar	Abhishek Kumar

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 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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name:B.Tech

Academic Session: 2023-24

Year:2023

Semester: V

CourseName:Design and Analysis of Algorithm

CourseCode: KCS-503

Course Coordinator Name: Mr. Abhishek Kumar

CO-PO/PSO/APOMatrix

CO No.	Programme Outcome(PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	3	3	2	-	-	-	2	2	-	3	3	-
CO2	3	3	3	3	2	2	-	1	1	1	-	3	3	-
CO3	3	3	2	3	3	2	-	2	1	1	2	3	3	-
CO4	3	3	3	3	2	2	-	2	2	1	3	3	3	-
CO5	2	2	2	2	2	2	-	2	1	1	1	2	3	-
POTarget	2.8	2.8	2.6	2.8	2.2	1.6	-	1.8	1.4	1.2	1.2	2.8	3	-

Faculty Members Teaching the Course	Signature
1. Mr. Abhishek Kumar	<i>Abhishek Kumar</i>

Abhishek Kumar
Signature of CourseCoordinator

Abh
Assoc./ Asst. Head DOC

Rajeev
Signature of Addl. HoD

[Signature]
Signature of HoD

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

- ❖ 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

Department of CSE (AI&ML)

Program Name: B.Tech


Academic Session: 2023-24 Year: 2023

Semester: V

Course Name: Mathematical Foundation AI, ML and Data Science (DE-1) Course Code: KAI-051 Course Coordinator Name: Ms. Richa

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Perform statistical analysis and appropriate statistical tests using R and visualize the outcome.	PO1, PO2, PO3, PO4, PO5, PO6, PO12 PSO2	2	C
CO2	Analyze the probability Distribution and linear method of regression analysis on a variety of data.	PO1, PO2, PO3, PO4, PO5, PO6, PO12 PSO2	4	P
CO3	Apply the manipulated data, design, and simple Monte Carlo experiments, and be able to use resampling methods.	PO1, PO2, PO3, PO4, PO5, PO6, PO12 PSO2	3	P
CO4	Examine the vector concept and advanced knowledge of inner product spaces with inequalities.	PO1, PO2, PO3, PO4, PO5, PO6, PO12 PSO2	4	P
CO5	Analyze Linear transformation and eigenvalues, eigenvectors, and their roles in orthogonal diagonalization of symmetric matrices.	PO1, PO2, PO3, PO4, PO5, PO6, PO12 PSO2	4	P

Faculty Members Teaching the Course	Signature
1. Ms. Richa Singh	


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).

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Program Name: B.Tech

Academic Session: 2023-24

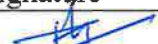
Year: 2023

Semester: V

Course Name: Mathematical Foundation AI, ML and Data Science (DE-1) **Course Code:** KAI-051 **Course Coordinator Name:** Ms. Richa

CO-PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	2	2	2	3	-	-	-	-	-	2	-	2
CO2	3	2	2	2	2	3	-	-	-	-	-	2	-	2
CO3	2	2	2	2	2	3	-	-	-	-	-	2	-	2
CO4	3	2	2	2	2	2	-	-	-	-	-	2	-	2
CO5	2	2	2	2	2	3	-	-	-	-	-	2	-	2
POTarget	2.6	2	2	2	2	2	-	-	-	-	-	2	-	2

Faculty Members Teaching the Course	Signature
1. Ms. Richa Singh	


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).

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE (AI&ML)

Program Name: B.Tech


Academic Session: 2023-24 **Year:** 2023

Semester: V

Course Name: Business Intelligence and Analytics (DE-1) **Course Code:** KDS-051 **Course Coordinator Name:** Dr. Abha Kiran Rajpoot


Course Outcomes

After completion of the course, the student will be able to		Relevant POs/PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Define the importance of data in business by introducing Intelligence in business strategies.	PO1, PO2, PO3, PO4, PO11, PO12, PSO2	2	F
CO2	Explain the process of data analytics and best practices for data mining and pitfalls of managing data analytics projects.	PO1, PO2, PO3, PO4, PO5, PO11, PO12, PSO2	3	M
CO3	Discuss fundamental concepts, theories, methods and models within Business Intelligence and Data Warehousing	PO1, PO2, PO3, PO4, PO5, PO11, PO12, PSO2	3	C
CO4	Analyze business intelligence using different categorization of operations such as extraction, cleansing, integrating, visualizing using Tableau.	PO1, PO2, PO3, PO4, PO5, PO9, PO11, PSO2	4	C
CO5	Evaluate the impact of DM and DW and identify the Issues and challenges in managing capabilities and cost in Business by decision analysis.	PO1, PO2, PO3, PO4, PO5, PO6, PO11, PO12, PSO2	4	M

Faculty Members Teaching the Course	Signature
1. Dr. Abha Kiran Rajpoot	


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 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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name:B.Tech

Academic Session: 2023-24

Year:2023

Semester: V

CourseName:Business Intelligence and Analytics (DE-1)**CourseCode:** KDS-051 **Course Coordinator Name:**Dr. Abha Kiran Rajpoot

CO-PO/PSO/APOMatrix

CO No.	Programme Outcome(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	3	2	3	-	-	-	-	-	-	2	3	-	2
CO2	3	3	3	2	3	-	-	-	-	-	3	2	-	3
CO3	2	2	2	3	2	-	-	-	-	-	2	3	-	2
CO4	3	3	3	2	3	-	-	-	2	-	3	2	-	3
CO5	3	2	3	3	3	2	-	-	-	-	2	3	-	3
POTarget	2.6	2.6	2.6	2.6	2.2	2	-	-	2	-	2.4	2.6	-	2.6

Faculty Members Teaching the Course	Signature
1. Dr. Abha Kiran Rajpoot	


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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- ❖ 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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE (AI&ML)

Program Name: B.Tech

Academic Session: 2023-24 Year: 2023

Semester: V

Course Name: Cloud Computing (DE-2)

Course Code: KML-051

Course Coordinator Name: Ms. Anjali Chauhan


Course Outcomes

After completion of the course, the student will be able to		Relevant POs/PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Describe architecture and underlying principles of cloud computing.	PO1, PO2, PSO2	2	C
CO2	Explain need, types, and tools of Virtualization for cloud.	PO1, PO2, PO3, PO4, PSO2	4	P
CO3	Describe Services Oriented Architecture and various types of clouds services.	PO1, PO2, PO3, PO4, PO5, PO6, PSO2	3	P
CO4	Explain Inter cloud resources management cloud storage services and their providers Assess security services and standards for cloud computing	PO1, PO2, PO3, PO4, PO5, PO6, PO12, PSO2	4	P
CO5	Analyze advanced cloud technologies.	PO1, PO2, PO3, PO4, PO5, PO6, PO8, PO9, PO11, PO12, PSO2	4	P

Faculty Members Teaching the Course	Signature
1. Ms. Anjali Chauhan	


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: 2023-24

Year: 2023

Semester: V

Course Name: Cloud Computing (DE-2)

Course Code: KML-051

Course Coordinator Name: Ms. Anjali Chauhan

CO-PO/PSO/APO Matrix

CO No.	Programme Outcome(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	-	-	-	-	-	-	-	-	-	-	-	3
CO2	3	2	3	2	-	-	-	-	-	-	-	-	-	3
CO3	3	2	3	2	3	2	-	-	-	-	-	-	-	3
CO4	3	2	3	2	3	2	-	-	-	-	-	2	-	3
CO5	3	2	3	2	3	2	-	2	2	3	3	2	-	3
POTarget	3	2	3	2	3	2	-	2	2	3	3	2	-	3

Faculty Members Teaching the Course	Signature
1. Ms. Anjali Chauhan	


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).

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE (AI & ML)

Program Name: B.Tech

Academic Session: 2023-24 **Year:** 2023


Semester: V

Course Name: Natural Language Processing (DE-2) **Course Code:** KAI-052

Course Coordinator Name: Dr. Sayani Ghosal

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Define the fundamentals concepts of natural language processing, their various phases with word level analysis.	PO1, PO2, PO3, PO4, PO9, PO12, PSO2	2	C, P
CO2	Understand the depth level concept of syntactic analysis with grammatical rules in NLP.	PO1, PO2, PO3, PO4, PO9, PO12, PSO2	2	C, P
CO3	Analyze the role of semantic analysis in NLP with word sense disambiguation.	PO1, PO2, PO3, PO4, PO5, PO9, PO12, PSO2	4	C, P
CO4	Explain the basic concept of Speech Processing and Related Parameters of Speech.	PO1, PO2, PO3, PO4, PO5, PO9, PO12, PSO2	2	C, P
CO5	Apply feature extraction approach for various real world NLP applications.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO11, PO12, PSO2	3	C, P

Faculty Members Teaching the Course	Signature
1. Dr. Sayani Ghosal	


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 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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name: B.Tech

Academic Session: 2023-24

Year: 2023

Semester: V

Course Name: Natural Language Processing (DE-2) Course Code: KAI-052

Course Coordinator Name: Dr. Sayani Ghosal

CO-PO/PSO/APO Matrix

CO No.	Programme Outcome(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	3	2	1	-	-	-	-	2	-	-	2	-	3
CO2	3	3	3	2	-	-	-	-	2	-	-	1	-	3
CO3	3	3	3	2	2	-	-	-	2	-	-	1	-	3
CO4	3	2	3	2	2	-	-	-	2	-	-	1	-	3
CO5	2	2	2	3	3	2	2	2	2	-	2	2	-	3
POTarget	2.6	2.6	2.6	2	1.4	2	2	2	2	-	2	1.4	-	3

Faculty Members Teaching the Course

1. Dr. Sayani Ghosal

Signature





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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- ❖ 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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name: B.Tech.

Academic Session: 2023-24

Year:2023

Semester: V


Course Name: Database Management System Lab

Course Code: KCS-551

Course Coordinator Name: Dr. Sapna Juneja

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Apply oracle 10 g for creating tables and other database objects.	PO1, PO9, PO11, PO12, PSO1	3	C, P
CO2	Implement a database schema for any case study.	PO1, PO3, PO9, PO11, PO12, PSO1	3	C, P
CO3	Write and execute simple and complex queries using DDL, DML by enforcing integrity constraints.	PO1, PO3, PO9, PO11, PO12, PSO1	3	C, P

Faculty Members Teaching the Course	Signature
1. Dr. Sapna Juneja	


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 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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name: B.Tech.

Academic Session: 2023-24

Year:2023

Semester: V

Course Name: Database Management System Lab

Course Code: KCS-551

Course Coordinator Name: Dr. Sapna Juneja

CO - PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	-	-	-	-	-	-	-	1	-	2	1	3	-
CO2	3	-	2	-	-	-	-	-	1	-	2	1	3	-
CO3	3	-	2	-	-	-	-	-	1	-	2	1	3	-
PO Target	3	-	2	-	-	-	-	-	1	--	2	1	3	-

Faculty Members Teaching the Course	Signature
1. Dr. Sapna Juneja	


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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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE (AI & ML)

Program Name: B.Tech

Academic Session: 2023-24

Year: 2023

Semester: V

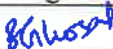

Course Name: Artificial Intelligence Lab

Course Code: KAI-551

Course Coordinator Name: Ms. Richa Singh

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Understand the concept of AI using Python.	PO1, PO2, PO3, PO4, PO5, PSO1, PSO2	4	M
CO2	Implement different AI Techniques in practical life.	PO1, PO2, PO3, PO4, PO5, PSO1, PSO2	5	F
CO3	Understand the practical application of Natural Language toolkit.	PO1, PO2, PO3, PO4, PO5, PO7, PO9, PO11, PO12, PSO1, PSO2	4	C

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Dr. Sayani Ghosal		2. Ms. Richa Singh	


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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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name: B.Tech

Academic Session: 2023-24

Year: 2023

Semester: V



Course Name: Artificial Intelligence Lab

Course Code: KAI-551

Course Coordinator Name: Ms. Richa Singh

CO-PO/PSO/APO Matrix

CO No.	Programme Outcome(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	1	2	1	1	-	-	-	-	-	-	-	1	1
CO2	2	2	3	2	1	-	-	-	-	-	-	-	1	1
CO3	3	2	3	2	2	3	3	-	3	-	2	2	1	2
POTarget	2.3	1.6	2.6	1.6	1.3	3	3	-	3	-	2	2	1	1.3

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
1. Dr. Sayani Ghosal		2. Ms. Richa Singh	


Signature of Course Coordinator


Assoc./ Asst. Head DOC


Signature of Addl. HoD


Signature of HoD

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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name: B.Tech

Academic Session: 2023-24

Year:2023

Semester: V

Course Name: Design and Analysis of Algorithm Lab Course Code: KCS-553

Course Coordinator Name: Mr. Abhishek Kumar

Course Outcomes


After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Understand basic techniques for designing algorithms, including the techniques of recursion and iterative approach.	PO1,PO2,PO3,PO4,PO5,PO6,P O11,PO12,PSO2	2	C, P
CO2	Apply algorithms to solve real world problems using various algorithm design strategies.	PO1,PO2,PO3,PO4,PO5,PO6,P O11,PO12,PSO2	3	C, P
CO3	Analyze the performance of algorithms with respect to time and space complexity.	PO1,PO2,PO3,PO4,PO5,PO6,P O11,PO12,PSO2	4	C, P

Faculty Members Teaching the Course	Signature
1. Mr. Abhishek Kumar	


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 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.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name: B.Tech

Academic Session: 2023-24

Year:2023

Semester: V


Course Name: Design and Analysis of Algorithm Lab

Course Code: KCS-553

Course Coordinator Name: Mr. Abhishek Kumar

CO - PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	2	2	2	2	-	-	-	-	2	2	-	1
CO2	3	2	2	2	2	2	-	-	-	-	2	2	-	2
CO3	3	2	2	2	2	2	-	-	-	-	2	2	-	2
PO Target	3	2	2	2	2	2	-	-	-	-	2	2	-	1.67

Faculty Members Teaching the Course	Signature
1. Mr. Abhishek Kumar	


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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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name: B.Tech

Academic Session: 2023-24

Year:2023

Semester: V

Course Name: Mini Project/Internship Assessment

Course Code: KCS-554

Course Coordinator Name: Ms. Bhawna

CO - PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	3	3	3	2	-	-	2	2	2	3	2	2
CO2	3	3	3	3	3	-	-	-	2	-	2	3	2	3
CO3	3	3	3	3	3	1	-	-	3	-	2	2	3	2
PO Target	3	3	3	3	3	1.5	-	-	2.4	2	2	2.7	2.4	2.4

Faculty Members Teaching the Course	Signature
1. Ms. Bhawna	


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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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name: B.Tech

Academic Session: 2023-24

Year:2023

Semester: V

Course Name: Mini Project/Internship Assessment

Course Code: KCS-554

Course Coordinator Name: Ms. Bhawna

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Identify a problem and gather its requirements, then design a solution using the latest tools and techniques.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO1, PSO2	2	F
CO2	Develop a project utilizing the latest technology to address the identified problem.	PO1, PO2, PO3, PO4, PO5, PO9, PO11, PO12, PSO1, PSO2	5	C
CO3	Enhance professional skills and critical thinking through the development process, culminating in the ability to present project work to evaluators.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO11, PO12, PSO1, PSO2	4	P

Faculty Members Teaching the Course	Signature
1. Ms. Bhawna	


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

Academic Session: 2023-24

Year: 2023

Semester: V

Course Name: Constitution of India

Course Code: KNC-501

Course Coordinator Name: Dr. Shelly Gupta

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Explore the basic features and modalities about the Indian constitution.	PO6, PO7	2	F, C
CO2	Analyze the functioning of Indian parliamentary system at the center and state level	PO6, PO7,	3	F, P
CO3	Explore aspects of the Indian Legal System and its related bodies.	PO6, PO7, PO8	2	F, C
CO4	Apply different laws and regulations related to engineering practices.	PO6, PO7, PO8, PO10	2	F, C
CO5	Correlate role of engineers with different organizations and governance models	PO6, PO7, PO8, PO9, PO10, PO11, PO12	2	F, C

Faculty Members Teaching the Course		Signature
1. Dr. Shelly Gupta		


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).

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of CSE(AI&ML)

Program Name: B.Tech

Academic Session: 2023-24

Year: 2023

Semester: V

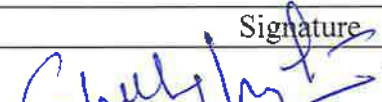
Course Name: Constitution of India

Course Code: KNC-501

Course Coordinator Name: Dr. Shelly Gupta

CO-PO/PSO/APO Matrix

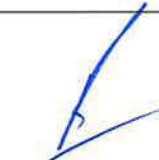
CO No.	Programme Outcome(PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	-	-	-	-	3	2	-	-	-	-	-	-	-
CO2	-	-	-	-	-	3	2	-	-	-	-	-	-	-
CO3	-	-	-	-	-	3	2	1	-	-	-	-	-	-
CO4	-	-	-	-	-	3	2	2	-	2	-	-	-	-
CO5	-	-	-	-	-	2	2	2	2	2	2	2	-	-
POTarget	-	-	-	-	-	2.8	2	1.6	2	2	2	2	-	-

Faculty Members Teaching the Course	Signature
1. Dr. Shelly Gupta	


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).