KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech Academic Session: 2024-25 Year: 2nd Semester: 3rd

Course Name: Universal Human Values & Professional Ethics Course Code:BVE301 Course Coordinator Name: Prof. Pawan Kumar Pal

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Understand the process of self-exploration and meaning of natural acceptance.	PO6, PO7, PO8, PO9, PO10, PO12, PSO2	Understand	C, P
CO2	Explore the concept of harmony in the human being (in Myself) being 'I' & 'body' as separate entity	PO6, PO7, PO8, PO9, PO10, PO12	Analyze	C, P
CO3	Analyze the process of developing harmony in family and society.	PO6, PO7, PO8, PO9, PO10, PO12, PSO2	Analyze	C, P
CO4	Analyze the process of developing harmony in nature and existence.	PO6, PO7, PO8, POPO9, PO10, PO12	Analyze	C, P
CO5	Apply the role of holistic understanding of harmony of professional ethics.	PO6, PO7, PO8, PO9, PO10, PO12, PSO2	Apply	C, P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Pawan Kumar Pal		Prof. Akash Goel	
Prof. Arti Sharma			

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 Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 2nd** **Semester: 3rd**

Course Name: Universal Human Values & Professional Ethics **Course Code:BVE301** **Course Coordinator Name: Prof. Pawan Kumar Pal**

CO - PO/PSO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	-	-	-	-	1	1	1	1	1	-	1	-	1
CO2	-	-	-	-	-	3	2	3	2	1	-	2	-	-
CO3	-	-	-	-	-	3	2	3	2	1	-	2	-	2
CO4	-	-	-	-	-	3	2	3	2	1	-	2	-	-
CO5	-	-	-	-	-	3	2	3	2	1	-	2	-	2
PO Target	-	-	-	-	-	2.6	1.8	2.6	1.8	1	-	1.8	-	1.67

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Pawan Kumar Pal		Prof. Akash Goel	
Prof. Arti Sharma			

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/P Matrix.
- If there is no correlation, then put a "-" (dash).

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech
Course Name: Data Structure
Academic Session: 2024-25
Course Code: BCS301
Year: 2nd
Semester: 3rd
Course Coordinator Name: Dr. Harsh Khatter

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Apply the concepts of Array and Linked List in problem solving.	PO1, PO2, PO3, PO4, PO11, PSO1	Apply	C, P
CO2	Analyze the working of abstract data types like stack and queue to solve scenario-based problems.	PO1, PO2, PO3, PO4, PO11, PSO1	Analyze	C, P
CO3	Examine the working of various searching and sorting algorithms on scenario-based problems in terms of complexity.	PO1, PO2, PO3, PO4, PO11, PSO1	Analyze	C, P
CO4	Examine the various types of tree data structures in terms of data storage, memory utilization, data representation, and optimization.	PO1, PO2, PO3, PO4, PO11, PSO1	Analyze	C, P
CO5	Analyze the problem statements in terms of graphs to solve real-world problems easily.	PO1, PO2, PO3, PO4, PO11, PSO1	Analyze	C, P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Dr. Harsh Khatter		Prof. Sreesh Gaur	
Prof. Anurag Mishra		Prof. Puneet Goyal	

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 Computer Science

Program Name: B.Tech
Course Name: Data Structure

Academic Session: 2024-25
Course Code: BCS301

Year: 2nd
Semester: 3rd
Course Coordinator Name: Dr. Harsh Khatter

CO - PO/PSO Matrix

CO No.	Programme Outcome (PO)												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	3	2	-	-	-	-	-	-	-	3	3	-
CO3	3	3	3	2	-	-	-	-	-	-	-	3	3	-
CO4	3	3	2	2	-	-	-	-	-	-	-	3	3	-
CO5	3	3	2	2	-	-	-	-	-	-	-	3	3	-
PO Target	3	3	2.4	1.8	-	-	-	-	-	-	-	3	3	-

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Dr. Harsh Khatter		Prof. Sreesh Gaur	
Prof. Anurag Mishra		Prof. Puneet Goyal	

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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 2nd** **Semester: 3rd**

Course Name: Computer Organization and Architecture **Course Code:BCS302** **Course Coordinator Name: Dr. Kalpna Sagar**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Elaborate the fundamental components of the basic computer system organization.	PO1, PO2, PO3, PO4, PO12	Understand	C
CO2	Illustrate the design of ALU, fixed- floating-point representations and various multiplication, division operations on binary numbers.	PO1, PO2, PO3, PO4, PO12, PSO1	Apply	C, P
CO3	Interpret control unit design and concept of pipelining.	PO1, PO2, PO3, PO4, PO12	Understand	C
CO4	Apply the concept of different types of memories for designing of memory system.	PO1, PO2, PO3, PO4, PO12, PSO1	Apply	C, P
CO5	Characterize different ways of communication with I/O devices and standard I/O interfaces	PO1, PO2, PO3, PO4, PO12	Understand	C

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Dr. Kalpna Sagar		Prof. Shreela Pareek	
Prof. Amit Kumar Singh Sanger		Prof. Anmol Jain	

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 Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 2nd** **Semester: 3rd**

Course Name: Computer Organization and Architecture Course Code:BCS302 **Course Coordinator Name: Dr. Kalpna Sagar**

CO - PO/PSO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	2	1	1	-	-	-	-	-	-	-	2	-	-
CO2	2	2	1	2	-	-	-	-	-	-	-	2	1	-
CO3	2	2	1	1	-	-	-	-	-	-	-	2	-	-
CO4	2	2	2	2	-	-	-	-	-	-	-	3	1	-
CO5	2	2	1	1	-	-	-	-	-	-	-	2	-	-
PO Target	2	2	1.20	1.40	-	-	-	-	-	-	-	2.2	1	-

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Dr. Kalpna Sagar		Prof. Shreela Pareek	
Prof. Amit Kumar Singh Sanger		Prof. Anmol Jain	

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 Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 2nd** **Semester: 3rd**
Course Name: DSTL **Course Code: BCS303** **Course Coordinator Name: Prof. Aakansha**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Illustrate basic mathematical objects such as sets, relations, POSET and Lattices.	PO1, PO2, PO12, PSO2	Apply	C,P
CO2	Examine various structures and properties of Boolean algebra and functions.	PO1, PO2, PO7, PSO2	Apply	C,P
CO3	Explore the mathematical properties via formal language of propositional and predicate logic.	PO1, PO2, PO4, PO7, PO11, PO12, PSO1, PSO2	Analyze	C,P
CO4	Solve substantial experience of Algebraic Structure as groups, rings and fields.	PO1, PO2, PO4, PO11, PO12, PSO1, PSO2	Apply	C,P
CO5	Use graphs as tools to visualize and simplify the problems.	PO1, PO2, PO4, PO5, PO7, PO11, PO12, PSO1, PSO2	Apply	C,P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Neha Shukla		Prof. Vandana	
Prof. Aakansha		Prof. Kuldeep Kumar Atariya	

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

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 l 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 Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech. **Academic Session: 2024-25** **Year: 2nd** **Semester: 3rd**
Course Name: DSTL **Course Code: BCS303** **Course Coordinator Name: Prof. Aakansha**

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	1	-	-	-	-	-	-	-	-	-	1	-	1
CO2	3	1	-	-	-	-	1	-	-	-	-	-	-	2
CO3	2	1	-	2	-	-	1	-	-	-	1	2	1	3
CO4	3	1	-	2	-	-		-	-	-	1	1	1	3
CO5	2	1	-	2	3	-	1	-	-	-	2	2	2	2
PO Target	2.6	1	-	2	3	-	1	-	-	-	1.33	1.40	1.33	2.0

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Neha Shukla	Neha	Prof. Vandana	Vandana
Prof. Aakansha		Prof. Kuldeep Kumar Atariya	Kuldeep

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/P Matrix.
- If there is no correlation, then put a "-" (dash).

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 2nd** **Semester: 3rd**

Course Name: Python Programming **Course Code: BCC302** **Course Coordinator Name: Prof. Bhagvan Krishna Gupta**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Explain the fundamentals of Python syntax, semantics and programming.	PO1, PO2	Understand	C
CO2	Express proficiency in the handling of strings and functions and be fluent in the use of Python control flow statements.	PO1, PO2, PO3, PO4, PO12	Apply	C, P
CO3	Determine the methods for ease of user to write python programs by utilizing the data structures like lists, dictionaries, tuples and sets.	PO1, PO2, PO3, PO4, PO12	Apply	C, P
CO4	Interpret the commonly used operations involving file systems and regular expressions.	PO1, PO2, PO3, PO4, PO12	Understand	F, C
CO5	Explain and use of different in-built function of packages and connecting with GUI programming.	PO1, PO2, PO3, PO4, PO12	Apply	C, P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Shivani	Shivani	Prof. Bhagvan Krishna Gupta	
Prof. Umnah	Umnah	Prof. Aakansha Moral	

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 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 Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 2nd** **Semester: 3rd**

Course Name: Python Programming **Course Code: BCC 302** **Course Coordinator Name: Prof. Bhagvan Krishna Gupta**

CO - PO/PSO Matrix

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

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Shivani	Shivani	Prof. Bhagvan Krishna Gupta	
Prof. Umnah	Umnah	Prof. Aakansha Moral	

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

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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech. **Academic Session:** 2024-25 **Year:** 2nd **Semester:** 3rd

Course Name: Data Structure Lab **Course Code:** BCS351 **Course Coordinator Name:** Prof. Anurag Mishra

CO - PO/PSO 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	3	-	-	-	-	-	-	1	3	3
CO2	3	3	2	2	3	-	-	-	-	-	-	2	2	2
CO3	3	3	2	2	3	-	-	-	-	-	-	3	2	2
CO4	3	3	3	2	3	-	-	-	-	-	-	3	3	3
PO Target	3	2.75	2.25	2	3	-	-	-	-	-	-	2.25	2.5	2.5

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Dr. Harsh Khatter		Prof. Sreesh Gaur	
Prof. Anurag Mishra		Prof. Puneet Goyal	

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 Computer Science

Program Name: B.Tech. **Academic Session: 2024-25** **Year:2nd** **Semester: 3rd**
Course Name: Data Structures Lab **Course Code: BCS351** **Course Coordinator Name: Prof. Anurag Mishra**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Perform the primitive operation on various types of data structures	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2	Apply	C, P
CO2	Apply the concepts of data structure in problem solving.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2	Apply	C, P
CO3	Make a solution for the scenario-based problems in terms of algorithm and programming code on competitive platforms.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2	Analyze	C, P
CO4	Design a solution for a project-based problem as a team and present the solution in class	PO1, PO2, PO3, PO4, PO5, PO12, PSO1, PSO2	Create	P, M

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Dr. Harsh Khatter		Prof. Sreesh Gaur	
Prof. Anurag Mishra		Prof. Puneet Goyal	

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

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 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 a Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech | **Academic Session: 2024-25** | **Year: 2nd** | **Semester: 3rd**
Course Name: COA Lab | **Course Code: BCS352** | **Course Coordinator Name: Prof. Anmol Jain**

CO - PO/PSO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	1	1	-	-	-	-	-	-	-	-	1	1	-
CO2	2	1	1	-	-	-	-	-	-	-	-	1	1	-
CO3	3	1	1	-	-	-	-	-	-	-	-	1	1	-
CO4	2	1	1	-	-	-	-	-	-	-	-	1	1	-
CO5	2	1	1	-	-	-	-	-	-	-	-	1	1	-
PO Target	2.20	1	1	-	-	-	-	-	-	-	-	1	1	-

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Dr. Kalpna Sagar		Prof. Shreela Pareek	
Prof. Amit Kumar Singh Sanger		Prof. Anmol Jain	

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

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 - P Matrix.
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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 2nd** **Semester: 3rd**

Course Name: COA Lab **Course Code: BCS352** **Course Coordinator Name: Prof. Anmol Jain**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Apply logic gates to customize the adders, subtractors and code conversion (B2G and G2B) circuit.	PO1, PO2, PO3, PO12, PSO1	Apply	C,P
CO2	Construct Multiplexers (4x1, 8x1) and Decoders (2x4, 3x8) using logic gates.	PO1, PO2, PO3, PO12, PSO1	Apply	C,P
CO3	Derive the excitation tables of various flip flops.	PO1, PO2, PO3, PO12, PSO1	Apply	C,P
CO4	Model 8-bit Arithmetic Logic unit.	PO1, PO2, PO3, PO12, PSO1	Apply	C,P
CO5	Model 8-bit input output system with four-bit internal registers.	PO1, PO2, PO3, PO12, PSO1	Apply	C,P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Dr. Kalpna Sagar		Prof. Shreela Pareek	
Prof. Amit Kumar Singh Sanger		Prof. Anmol Jain	

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 Computer Science

Program Name: B.Tech Academic Session: 2024-25 Year: 2nd Semester: 3rd

Course Name: Mini Project/Internship Assessment Course Code: BCC351 Course Coordinator Name: Dr. Anurag Tewari

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Analyze the real-life problem and their implementation through tools and techniques.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	Analyze	C
CO2	Describe the creative design process through the integration and application of diverse technical knowledge.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	Understand	C
CO3	Determine the possible solution to meet the requirements of the problem solving.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	Apply	C
CO4	Prepare solution by employing a variety of tools and techniques.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	Apply	C
CO5	Estimate the designed solution to ensure impact fullness towards the selected problem.	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	Understand	C

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Pawan Kumar Pal		Rajendra Kumar Patel	Rajendra Kumar
Prof. Vikas Gangwar	Vikas Gangwar	Dr. Anurag Tewari	

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 sho 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 Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech. **Academic Session:** 2024-25 **Year:** 2nd **Semester:** 3rd
Course Name: Mini Project/Internship Assessment **Course Code:** BCC351 **Course Coordinator Name:** Dr. Anurag Tewari

CO - PO/PSO 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	2	3	2	2	2	3	3	2	3	2	3
CO2	3	3	2	3	3	2	2	2	3	3	2	3	2	3
CO3	3	3	2	3	3	2	2	2	3	3	2	3	2	3
CO4	3	3	3	2	3	2	2	2	3	3	2	3	2	3
CO5	3	3	3	2	3	2	2	2	3	3	2	3	2	3
PO Target	3	3	2.6	2.4	3	2	2	2	3	3	2	3	2	3

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Pawan Kumar Pal		Rajendra Kumar Patel	Rajendra Kumar
Prof. Vikas Gangwar	Vikas Gangwar	Dr. Anurag Tewari	

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 Computer Science

Program Name: B.Tech
Course Name: Web Design Workshop
Academic Session: 2024-25 Year: 2nd Semester: 3rd
Course Code: BCS 353 Course Coordinator Name: Prof. Kuldeep Kumar Atariya

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Implement advanced HTML tags for designing HTML pages.	PO1, PO2, PO3, PO4, PO5, PSO, PSO2	Apply	P
CO2	Implement elements of Cascading Style Sheet (CSS) for providing look and feel in web sites.	PO1, PO2, PO3, PO4, PO5, PSO1. PSO2	Apply	P
CO3	Implement Bootstrap components to design dynamic web sites.	PO1, PO3, PO4, PO5, PO12, PSO1, PSO 2	Apply	P
CO4	Understanding the basic concept of Java Script and its application.	PO1, PO4, PO5, PSO1, PSO2	Understand	C
CO5	Implement the validation and verification functions in web sites by using Java Script.	PO1, PO4, PO5, PSO1, PSO2	Apply	P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Vivek Kumar Sharma		Prof. Abhishek Goyal	
Prof. Kuldeep Kumar Atariya			

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 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 optiona Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 2nd** **Semester: 3rd**
Course Name: Web Design Workshop **Course Code: BCS 353** **Course Coordinator Name: Prof. Kuldeep Kumar Atariya**

CO - PO/PSO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1	1	2	1	1	-	-	-	-	-	-	-	1	1
CO2	1	1	2	1	2	-	-	-	-	-	-	-	1	1
CO3	2	-	3	1	3	-	-	-	-	-	-	3	2	2
CO4	1	-	-	1	1	-	-	-	-	-	-	-	1	1
CO5	2	-	-	2	2	-	-	-	-	-	-	3	2	2
PO Target	1.4	1	2.33	1.2	1.8	-	-	-	-	-	-	3	1.4	1.4

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Vivek Kumar Sharma		Prof. Abhishek Goyal	
Prof. Kuldeep Kumar Atariya			

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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 3rd** **Semester: 5th**

Course Name: DBMS **Course Code: KCS 501** **Course Coordinator Name: Dr. Gaurav Dubey**

Course Outcomes

After completion of the course, the student will be able to				
CO No.	**Statement of Course Outcome**	**Relevant POs/ PSOs**	**Revised Bloom's Level (BL)**	**Knowledge Category (KC)**
CO1	Illustrate the knowledge of database concepts along with selection of the data model and C design of database for real world.	PO1, PO2, PO3, PO12	Apply	C, P
CO2	Apply query processing techniques (relational algebra and relational calculus expressions) with knowledge of relational model and query languages.	PO1, PO2, PO3, PO4, PO12	Apply	C, P
CO3	Solve the database redundancy problem using normalization techniques for good database design.	PO1, PO2, PO3, PO4, PO12	Analyze	C, P
CO4	Explain the database transactions processing concepts and broad range of database management issues in concurrent environment.	PO1, PO2, PO3, PO12	Apply	C, P
CO5	Examine the different concurrency control techniques and study of database recovery methods.	PO1, PO2, PO3, PO12	Apply	C, P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Dr. Ajay Shrivastava		Prof. Arushi Gupta	
Dr. Gaurav Dubey			

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 sh 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 par Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech. **Academic Session:** 2024-25 **Year:** 3rd **Semester:** 5th
Course Name: DBMS **Course Code:** KCS501 **Course Coordinator Name:** Dr. Gaurav Dubey

CO - PO/PSO 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	-	-	-	-	-	-	-	-	2	-	-
CO2	3	3	3	2	-	-	-	-	-	-	-	3	-	-
CO3	3	3	3	2	-	-	-	-	-	-	-	2	-	-
CO4	3	3	2	-	-	-	-	-	-	-	-	2	-	-
CO5	3	2	2	-	-	-	-	-	-	-	-	1	-	-
PO Target	3	2.6	2.6	2	-	-	-	-	-	-	-	2	-	-

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Dr. Ajay Shrivastava		Prof. Arushi Gupta	
Dr. Gaurav Dubey			

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/AP Matrix.
- If there is no correlation, then put a "-" (dash).

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 3rd** **Semester: 5th**

Course Name: Compiler Design **Course Code: KCS502** **Course Coordinator Name: Prof. Arti Sharma**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Understand different phases and passes of compiler along with LEX and YACC tool.	PO1, PO2, PO3, PO4, PO12	Understand	C
CO2	Illustrate various parsing techniques i.e. Top-Down and Bottom-up parsers using LL, SLR, CLR, and LALR parsing table.	PO1, PO2, PO3, PO12	Apply	C,P
CO3	Make use of Syntax Tree, DAG to generate the intermediate code in the form of 3-address code.	PO1, PO2, PO12	Apply	C,P
CO4	Apply data structures used for Symbol Table, Run time organization and error in phases of compiler.	PO1, PO2, PO12	Understand	C
CO5	Apply code optimization and Generation techniques resulting in Target Code.	PO1, PO2, PO3, PO12	Apply	C,P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Arti Sharma		Prof. Bhagvan Kumar Gupta	
Prof. Akash Goel			

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 shou 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 Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech. **Academic Session:** 2024-25 **Year:** 3rd **Semester:** 5th
Course Name: Compiler Design **Course Code:** KCS502 **Course Coordinator Name:** Prof. Arti Sharma

CO - PO/PSO 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	1	-	-	-	-	-	-	-	2	-	-
CO2	3	3	1	-	-	-	-	-	-	-	-	2	-	-
CO3	3	3	-	-	-	-	-	-	-	-	-	2	-	-
CO4	3	2	-	-	-	-	-	-	-	-	-	2	-	-
CO5	3	3	2	-	-	-	-	-	-	-	-	2	-	-
PO Target	3	2.6	1.67	1	-	-	-	-	-	-	-	2	-	-

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Arti Sharma		Prof. Bhagvan Kumar Gupta	
Prof. Akash Goel			

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 Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 3rd** **Semester: 5th**
Course Name: DAA **Course Code: KCS503** **Course Coordinator Name: Prof. Vivek Kumar Sharma**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Analyze the performance of algorithms using different asymptotic analysis methods	PO1, PO2, PO3, PO12, PSO1	Analyze	C, M
CO2	Understand the concept of Advance Data Structures	PO1, PO2, PO3, PO12, PSO1	Understand	C
CO3	Address computational problems using divide-and-conquer, greedy, and dynamic programming techniques	PO1, PO2, PO3, PO12, PSO1	Apply	C, P
CO4	Illustrate the applications of backtracking, branch-and-bound, string matching, and approximation algorithm.	PO1, PO2, PO3, PO12, PSO1	Apply	C, P
CO5	Understand the concept of P & NP-Problems	PO1, PO2, PO3, PO12, PSO1	Understand	C

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Raj Kumar		Dr. Akash Punhani	
Prof. Vivek Kumar Sharma			

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 sh 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 pa Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech
Course Name: DAA

Academic Session: 2024-25
Course Code: KCS503

Year: 3rd Semester: 5th
Course Coordinator Name: Prof. Vivek Kumar Sharma

CO - PO/PSO 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	3	-
CO2	3	2	2	-	-	-	-	-	-	-	-	2	3	-
CO3	3	2	2	-	-	-	-	-	-	-	-	2	3	-
CO4	3	2	2	-	-	-	-	-	-	-	-	2	3	-
CO5	3	2	2	-	-	-	-	-	-	-	-	2	1	-
PO Target	3	2	2	-	-	-	-	-	-	-	-	2	2.6	-

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Raj Kumar		Dr. Akash Punhani	
Prof. Vivek Kumar Sharma			

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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 3rd** **Semester: 5th**

Course Name: OOSD **Course Code: KCS 054** **Course Coordinator Name: Prof. Abhishek Goyal**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Understand the insights of object-oriented programming.	PO2, PO3, PO4, PO12	Understand	C
CO2	Apply the role of overall modelling concepts using UML.	PO 2, PO3, PO4, PO5, PO12, PSO1	Apply	C,P
CO3	Understand various object-oriented structures (SA/SD, JSD)	PO2, PO3, PO4, PO5, PO12, PSO1	Understand	C,P
CO4	Apply programming language C++ w.r.t OOPS	PO2, PO3, PO4, PO12	Apply	C,P
CO5	Implement C++ in object-oriented modelling.	PO2, PO3, PO4, PO12	Apply	C,P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Abhishek Goyal		Prof. Pravin Srivastav	
Prof. Vinay Pratap 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 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 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 Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech. **Academic Session:** 2024-25 **Year:**3rd **Semester:** 5th
Course Name: OOSD **Course Code:** KCS 052 **Course Coordinator Name:** Prof. Abhishek Goyal

CO - PO/PSO 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	-	-	-	-	-	-	-	2	-	-
CO2	-	3	3	3	2	-	-	-	-	-	-	3	2	-
CO3	-	3	3	2	-	-	-	-	-	-	-	3	2	-
CO43	1	3	3	2	-	-	-	-	-	-	-	3	-	-
CO5	1	3	3	2	-	-	-	-	-	-	-	3	-	-
PO Target	1	2.8	3	2.2	2	-	-	-	-	-	-	2.8	2	-

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Abhishek Goyal		Prof. Pravin Srivastav	
Prof. Vinay Pratap 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/A Matrix.
- If there is no correlation, then put a "-" (dash).

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 3rd** **Semester: 5th**
Course Name: Machine Learning Techniques **Course Code: KOE055** **Course Coordinator Name: Prof. Akansha Moral**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Understand the need for machine learning for various problem solving.	PO2, PO6, PO10, PO11, PO12, PSO1	Understand	C
CO2	Understand a wide variety of learning algorithms and how to evaluate models generated from data.	PO1, PO2, PO6, PO10, PO11, PO12, PSO1	Apply	C,P
CO3	Understand the latest trends in machine learning.	PO2, PO6, PO10, PO11, PO12, PSO1	Understand	C
CO4	Design appropriate machine learning algorithms and apply the algorithms to a real-world problem.	PO1, PO2, PO6, PO9, PO10, PO11, PO12, PSO1	Apply	C,P
CO5	Optimize the models learned and report on the expected accuracy that can be achieved by applying the models.	PO1, PO2, PO6, PO10, PO11, PO12, PSO1	Apply	C,P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Umnah	Umnah	Prof. Shruti Kumari	Skumari
Prof. Aakansha Moral			

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 Computer Science

Program Name: B.Tech. **Academic Session:** 2024-25 **Year:** 3rd **Semester:** 5th

Course Name: Machine Learning Techniques **Course Code:** KOE055 **Course Coordinator Name:** Prof. Akansha Moral

CO - PO/PSO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	1	-	-	-	2	-	-	-	1	1	1	2	-
CO2	3	2	-	-	-	2	-	-	-	1	1	1	2	-
CO3	-	1	-	-	-	2	-	-	-	1	1	1	2	-
CO4	3	2	-	-	-	2	-	-	1	1	1	1	2	-
CO5	2	2	-	-	-	2	-	-	-	1	1	1	2	-
PO Target	2.67	1.6	-	-	-	2	-	-	1	1	1	1	2	-

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Umnah		Prof. Shruti Kumari	
Prof. Akansha Moral			

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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 3rd** **Semester: 5th**

Course Name: COI **Course Code: KNC-501** **Course Coordinator Name: Dr. Akash Punhani**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Identify the basic features and modalities about the Indian constitution.	PO6, PO8, PO12	Understand	F /C
CO2	Relate the functioning of the Indian parliamentary system at the center and state level.	PO6, PO8, PO12	Understand	F/ C
CO3	Differentiate between different aspects of the Indian Legal System and its related bodies.	PO6, PO8, PO12	Understand	F /C
CO4	Paraphrase intellectual property rights and innovation environment with related regulatory framework.	PO6, PO8, PO10, PO12	Apply	F /P
CO5	Relate the role of engineers with different organizations and governance models.	PO6, PO8, PO10, PO11, PO12	Understand	F /C

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Pawan Kumar Pal		Prof. Rohan Rathore	
Dr. Akash Punhani			

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 s 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 pa Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech. **Academic Session: 2024-25** **Year: 3rd** **Semester: 5th**
Course Name: COI **Course Code: KNC-501** **Course Coordinator Name: Dr. Akash Punhani**

CO - PO/PSO Matrix

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

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Pawan Kumar Pal		Prof. Rohan Rathore	
Dr. Akash Punhani			

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/AP Matrix.
- If there is no correlation, then put a "-" (dash).

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 3rd** **Semester: 5th**

Course Name: DBMS Lab **Course Code: KCS551** **Course Coordinator Name: Prof. Arushi Gupta**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Implement the concepts of table creation, views, indexes and other database objects using Oracle 10g express edition.	PO1, PO2, PO4, PO5, PO11, PO12	Apply	P
CO2	Solve simple and complex queries using DDL, DML, DCL and TCL.	PO1, PO2, PO4, PO11, PO12	Apply	P
CO3	Utilize entity integrity, referential integrity, key constraints and domain constraints on database.	PO1, PO2, PO4, PO11, PO12	Apply	P
CO4	Implement the PL/SQL blocks, procedure functions, packages and triggers, cursors.	PO1, PO2, PO4, PO11, PO12	Apply	P
CO5	Design a database schema for a real-world problem like Hospital management system.	PO1, PO2, PO3, PO4, PO11, PO12, PSO1, PSO2	Apply	P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Dr. Ajay Shrivastava		Prof. Arushi Gupta	
Dr. Gaurav Dubey			

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 Computer Science

Program Name: B.Tech. **Academic Session:** 2024-25 **Year:** 3rd **Semester:** 5th
Course Name: DBMS Lab **Course Code:** KCS551 **Course Coordinator Name:** Prof. Arushi Gupta

CO - PO/PSO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	-	1	3	-	-	-	-	-	2	2	-	-
CO2	3	3	-	3	-	-	-	-	-	-	2	2	-	-
CO3	3	3	-	3	-	-	-	-	-	-	2	2	-	-
CO4	3	3	-	3	-	-	-	-	-	-	2	2	-	-
CO5	3	3	2	3	-	-	-	-	-	-	2	3	2	3
PO Target	3	3	2	2.60	3	-	-	-	-	-	2.20	2.20	2	3

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Dr. Ajay Shrivastava		Prof. Arushi Gupta	
Dr. Gaurav Dubey			

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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 3rd** **Semester: 5th**
Course Name: CD Lab **Course Code: KCS552** **Course Coordinator Name: Prof. Akash Goel**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Implement the Lexical Analyzer using C language and LEX tool.	PO1, PO2, PO5, PO9, PO12	Apply	C, P
CO2	Experiment with the knowledge of different parsers (Operator precedence, shift reduce etc.) using C language.	PO1, PO2, PO9, PO12	Apply	C, P
CO3	Implement Intermediate code generation and optimization for various expressions.	PO1, PO2, PO9, PO12	Apply	C, P
CO4	Design a basic tool that showcase phase(s) of the compiler.	PO1, PO2, PO3, PO4, PO9, PO11, PO12, PSO1	Apply	C, M

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Arti Sharma		Prof. Bhagvan Kumar Gupta	
Prof. Akash Goel			

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 sh 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 pa Condition and Criteria.

KIET Group of Institutions, Delhi – NCR,

Department of Computer Science

Program Name: B.Tech.
Course Name: CD Lab

Academic Session: 2024-25
Course Code: KCS552

Year: 3rd
Semester: 5th
Course Coordinator Name: Prof. Akash Goel

CO - PO/PSO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	-	-	2	-	-	-	1	-	-	2	-	-
CO2	3	3	-	-	-	-	-	-	1	-	-	2	-	-
CO3	3	3	-	-	-	-	-	-	1	-	-	2	-	-
CO4	3	3	1	2	-	-	-	-	2	-	1	2	3	-
PO Target	3	3	1	2	2	-	-	-	1.25	-	1	2	3	-

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Arti Sharma		Prof. Bhagvan Kumar Gupta	
Prof. Akash Goel			

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/A Matrix.
- If there is no correlation, then put a "-" (dash).

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year:3rd** **Semester: 5th**
Course Name: DAA Lab **Course Code: KCS 553** **Course Coordinator Name: Dr. Akash Punhani**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Implement algorithm to solve problems by iterative approach.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	Apply	C, P
CO2	Implement algorithm to solve problems by divide and conquer approach	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	Apply	C, P
CO3	Implement algorithm to solve problems by Greedy algorithm approach.	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	Apply	C, P
CO4	Implement algorithm to solve problems by Dynamic programming, backtracking, branch and bound approach	PO1, PO2, PO3, PO4, PO5, PO12, PSO1	Apply	C, P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Raj Kumar		Dr. Akash Punhani	
Prof. Vivek Kumar Sharma			

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

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 t 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 opti Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech. **Academic Session:** 2024-25 **Year:** 3rd **Semester:** 5th
Course Name: DAA Lab **Course Code:** KCS 553 **Course Coordinator Name:** Dr. Akash Punhani

CO - PO/PSO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	1	2	2	-	-	-	-	-	-	1	3	-
CO2	3	2	1	2	2	-	-	-	-	-	-	1	3	-
CO3	3	2	1	2	2	-	-	-	-	-	-	1	3	-
CO4	3	2	1	2	3	-	-	-	-	-	-	1	3	-
PO Target	3	2	1	2	2.25	-	-	-	-	-	-	1	3	-

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Raj Kumar		Dr. Akash Punhani	
Prof. Vivek Kumar Sharma			

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

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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech | Academic Session: 2024-25 | Year: 3rd | Semester: 5th

Course Name: Mini Project | Course Code: KCS554 | Course Coordinator Name: Prof. Vinay Pratap Singh

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Identify a problem and gather its requirements	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO10, PO11, PO12, PSO1, PSO2	Analyze	C
CO2	Design a solution of the problem using latest tools & techniques.	PO1, PO2, PO3, PO4, PO5, PO9, PO11, PO12, PSO1, PSO2	Understand	C
CO3	Develop a project using latest technology.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PO11, PO12, PSO1, PSO2	Apply	C
CO4	Develop professional skills and critical thinking to prepare for major project	PO1, PO2, PO3, PO4, PO5, PO6, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	Apply	C
CO5	Demonstrate an ability to present project works to the evaluators.	PO1, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2	Understand	C

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Vinay Pratap Singh		Prof. Abhishek Goyal	

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 shoul 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 a Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech. **Academic Session:** 2024-25 **Year:** 3rd **Semester:** 5th
Course Name: Mini Project **Course Code:** KCS554 **Course Coordinator Name:** Prof. Vinay Pratap Singh

CO - PO/PSO 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
CO4	3	3	3	3	3	2	-	2	3	2	2	3	2	2
CO5	2	-	-	-	-	-	-	2	2	3	2	3	2	2
PO Target	2.8	3	3	3	3	1.67	-	2	2.4	2.33	2	2.80	2.2	2.2

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Vinay Pratap Singh		Prof. Abhishek Goyal	

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 Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 4th** **Semester: 7th**
Course Name: Software Testing **Course Code: KCS076** **Course Coordinator Name: Prof. Shreela Pareek**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Understand the basics of software testing, its objectives, validation and verification approach	PO1, PO2, PO4, PO8, PO10, PO11, PSO1	Understand	C
CO2	Illustrate various functional and structural testing methods of software products.	PO1, PO2, PO4, PSO1	Apply	C, P
CO3	Determine the process of Test Selection for Regression Testing and minimization of test cases	PO1, PO2, PO4, PSO1	Understand	C, P
CO4	Explore testing activities and test data generation tools.	PO1, PO2, PO4, PO5, PO12, PSO1	Analyze	C, P
CO5	Apply object oriented and web application test cases on Testing tools.	PO1, PO2, PO4, PO5, PO12, PSO1	Apply	C, P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Dr. Kalpna Sagar		Prof. Shreela Pareek	
Prof. Rishabh Chakraborty			

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 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 Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech. **Academic Session:** 2024-25 **Year:** 4th **Semester:** 7th

Course Name: Software Testing **Course Code:** KCS076 **Course Coordinator Name:** Prof. Shreela Pareek

CO - PO/PSO Matrix

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

Faculty Members Teaching the Course	Signature
Dr. Kalpna Sagar	
Prof. Rishabh Chakraborty	

Faculty Members Teaching the Course	Signature
Prof. Shreela Pareek	

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.
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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 4th** **Semester: 7th**

Course Name: Cloud Computing **Course Code: KCS713** **Course Coordinator Name: Prof. Vinay Pratap Singh**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Articulate the main concepts, key technologies, strengths, and limitations of cloud computing	PO1, PO5, PO8, PO12	Understand	F, C
CO2	Apply Virtualization of hardware and software resources Like computing resources, memory and operating system in Cloud Computing	PO1, PO5, PO12	Apply	P
CO3	Implement data access management, data storage and computing services on cloud.	PO1, PO5, PO12	Apply	P
CO4	Understand the core issues of cloud computing such as resource management and security	PO1, PO5, PO12	Understand	F, C
CO5	Classify cloud technologies for the next generation computing paradigm	PO1, PO5, PO12	Analyze	F, C, P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Vinay Pratap Singh		Prof. Anmol Jain	
Prof. Amit Kumar Singh Sanger			

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 ar Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech. **Academic Session: 2024-25** **Year: 4th** **Semester: 7th**

Course Name: Cloud Computing **Course Code: KCS713** **Course Coordinator Name: Prof. Vinay Pratap Singh**

CO - PO/PSO 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	2	-	-	-	-	-	-	2	2	-
CO2	2	2	3	2	3	-	-	-	-	-	-	2	2	-
CO3	2	3	3	2	3	-	-	-	-	-	-	2	2	-
CO4	2	3	-	2	3	-	-	-	-	-	2	2	2	-
CO5	2	3	-	3	3	-	-	-	-	-	2	3	3	-
PO Target	2	2.6	3	2.2	2.8	-	-	-	-	-	2	2.2	2.2	-

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Vinay Pratap Singh		Prof. Anmol Jain	
Prof. Amit Kumar Singh Sanger			

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 Computer Science

Program Name: B.Tech
Course Name: PME
Course Outcomes

Academic Session: 2024-25
Course Code: KHU 702

Year: 4th
Semester: 7th
Course Coordinator Name: Prof. Shivani

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Understand the theories of entrepreneurship and entrepreneurial development program.	PO6, PO9,PO10	Understand	C
CO2	Categorize innovative business ideas and market opportunities for business development.	PO3, PO6, PO9, PO11, PSO2	Analyze	C, P
CO3	Discuss the importance of project life cycle and different types of appraisal techniques.	PO6, PO9, PO10, PO11	Understand	C
CO4	Compute different types of project financing requirements based on cash flow statements.	PO6, PO9, PO11, PSO1	Apply	C, P
CO5	Describe social entrepreneurship opportunities and risk management techniques in social enterprises.	PO6, PO9, PO11, PSO2	Understand	C

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Neha Shukla		Prof. Pravin Srivastav	
Prof. Shivani			

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 Computer Science

Program Name: B.Tech. **Academic Session: 2024-25** **Year: 4th** **Semester: 7th**
Course Name: PME **Course Code: KHU702** **Course Coordinator Name: Prof. Shivani**
CO - PO/PSO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	-	-	-	-	1	-	-	2	1	-	-	-	-
CO2	-	-	1	-	-	1	-	-	3	-	2	-	-	1
CO3	-	-	-	-	-	2	-	-	3	2	3	-	-	-
CO4	-	-	-	-	-	1	-	-	3	2	3	-	-	-
CO5	-	-	-	-	-	2	-	-	2	-	1	-	-	2
PO Target	-	-	1	-	-	1.4	-	-	2.6	1.67	2.25	-	-	1.50

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Neha Shukla	Neha	Prof. Pravin Srivastav	Pravin
Prof. Shivani	Shivani		

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.
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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech | Academic Session: 2024-25 | Year: 4th | Semester: 7th
Course Name: RER | Course Code: KOE-074 | Course Coordinator Name: Prof. Vandana

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Classify the renewable and non- renewable sources of energy.	PO1, PO2, PO7	Understand	F
CO2	Illustrate the working principle of various solar energy system.	PO1, PO2, PO7	Understand	F,C
CO3	Discuss the Geothermal & Tidal energy, its mechanism of production and its applications.	PO1, PO2, PO12	Understand	F,C
CO4	Interpret winds energy as alternative form of energy and its tapping.	PO1, PO2, PO7, PO12	Remember	F,C
CO5	Summarize the basics of biomass energy sources and relevant thermos-dynamics	PO1, PO2, PO7	Understand	F,C

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Akanksha		Prof. Shruti Kumari	
Prof. Vandana			

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 shou 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 a Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech. **Academic Session:** 2024-25 **Year:** 4th **Semester:** 7th

Course Name: RER **Course Code:** B.Tech **Course Coordinator Name:** Prof. Vandana

CO - PO/PSO Matrix

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

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Akanksha		Prof. Shruti Kumari	
Prof. Vandana			

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 Computer Science

Program Name: B.Tech
Course Name: ST Lab
Academic Session: 2024-25
Course Code: KCS751A
Year: 4th
Semester: 7th
Course Coordinator Name: Prof. Rishabh Chakraborty

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
1	Derive effective test cases based on software requirements.	PO1, PO2, PO4, PO8, PO9, PO12	Apply	P
2	Apply a wide variety of testing techniques in an effective way.	PO1, PO2, PO4, PO5, PO8, PO12, PSO1	Apply	P
3	Simulate various test scenarios using automated software testing tool (Selenium).	PO1, PO2, PO4, PO5, PO8, PO12, PSO1	Apply	P
4	Analyze test plan for the project and report generation using Mantis BT.	PO1, PO2, PO4, PO5, PO8, PO9, PO12, PSO1	Analyze	P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Dr. Kalpna Sagar	Kalpna	Prof. Shreela Pareek	Shreela
Prof. Rishabh Chakraborty			

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 shou 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 a Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech. **Academic Session:** 2024-25 **Year:** 4th **Semester:** 7th
Course Name: ST Lab **Course Code:** KCS751A **Course Coordinator Name:** Prof. Rishabh Chakraborty

CO - PO/PSO Matrix

CO No.	Programme Outcome (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	2	-	1	-	-	-	1	1	-	-	2	2	-
CO2	2	2	-	1	-	-	-	1	1	-	-	2	-	-
CO3	2	2	-	1	3	-	-	1	1	-	-	2	2	-
CO4	2	2	-	1	3	-	-	1	2	-	-	2	2	-
PO Target	2	2	-	1	3	-	-	1	1.25	-	-	2	2	-

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Dr. Kalpna Sagar		Prof. Shreela Pareek	
Prof. Rishabh Chakraborty			

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/AP Matrix.
- If there is no correlation, then put a "-" (dash).

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 4th** **Semester: 7th**

Course Name: Internship Assessment **Course Code: KCS752** **Course Coordinator Name: Prof. Vivek Kumar Sharma**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Identify a problem and gather its requirements.	PO1, PO2, PO3, PO6, PO10, PSO1, PSO2	Apply	C
CO2	Design a solution of the problem using latest tools & techniques.	PO1, PO2, PO3, PO6, PSO1, PSO2	Apply	P
CO3	Develop a project using latest technology.	PO1, PO2, PO3, PSO1, PSO2	Create	C
CO4	Develop professional skills and critical thinking to prepare for major project.	PO1, PO2, PO3, PO6, PO10, PSO1, PSO2	Analyze	P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Akanksha		Prof. Vivek Kumar Sharma	
Prof. Rajendra Kumar Patel	Rajendra 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 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 optiona Condition and Criteria.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech. Academic Session: 2024-25 Year:4th Semester:7th

Course Name: Internship Assessment Course Code: KCS752 Course Coordinator Name: Prof. Vivek Kumar Sharma

CO - PO/PSO 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	-	-	2	-	-	-	2	-	-	2	2
CO2	3	3	3	-	-	1	-	-	-	-	-	-	2	3
CO3	3	3	3	-	-	-	-	-	-	-	-	-	3	2
CO4	3	3	3	-	-	2	-	-	-	2	-	-	2	2
PO Target	3	3	3	-	-	1.67	-	-	-	2	-	-	2.25	2.25

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Akanksha		Prof. Vivek Kumar Sharma	
Prof. Rajendra Kumar Patel	Rajendra 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 Computer Science

Program Name: B.Tech **Academic Session: 2024-25** **Year: 4th** **Semester: 7th**

Course Name: Project Lab **Course Code: KCS753** **Course Coordinator Name: Prof. Sreesh Gaur**

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Select and summarize all aspects of real-life problem through information gathering.	PO2, PO3, PO4, PO5, PO6, PO7, PO9, PO10, PO11, PO12, PSO1, PSO2	Understand	C,P
CO2	Apply acquired knowledge to develop a C model.	PO2, PO3, PO4, PO5, PO6, PO7, PO9, PO10, PO11, PO12, PSO1, PSO2	Apply	C,P
CO3	Analyze the outcome of each phase using various tools and techniques.	PO2, PO3, PO4, PO5, PO6, PO7, PO9, PO10, PO11, PO12, PSO1, PSO2	Analyze	C,P
CO4	Defend the validity of idea or quality of result with the previous data/ result.	PO2, PO3, PO4, PO5, PO6, PO7, PO9, PO10, PO11, PO12, PSO1, PSO2	Evaluate	C,P
CO5	Test the working model and demonstrate the results by publishing the idea/outcome.	PO2, PO3, PO4, PO5, PO6, PO7, PO9, PO10, PO11, PO12, PSO1, PSO2	Create	C,P

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Neha Shukla	Neha	Prof. Vandna	Vandana
Prof. Vikas Gangwar	Vikas	Prof. Umnah	Umnah
Prof. Rohan Rathore	Rohan	Prof. Pravin Srivastav	Pravin

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 sho have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Science

Program Name: B.Tech.
Course Name: Project Lab

Academic Session: 2024-25
Course Code: KCS753

Year: 4th
Semester: 7th
Course Coordinator Name: Prof. Sreesh Gaur

CO - PO/PSO 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	1	2	-	3	2	3	3	3	3
CO2	-	3	3	3	2	1	2	-	3	2	3	3	3	3
CO3	-	3	3	3	2	1	2	-	3	2	3	3	3	3
CO4	-	3	3	3	2	1	2	-	3	2	2	2	3	3
CO5	-	3	3	3	2	1	2	-	3	2	1	2	3	3
PO Target	-	3	3	3	2.2	1	2	-	3	2	2.4	2.6	3	3

Faculty Members Teaching the Course	Signature	Faculty Members Teaching the Course	Signature
Prof. Neha Shukla		Prof. Vandna	
Prof. Vikas Gangwar		Prof. Umnah	
Prof. Rohan Rathore		Prof. Pravin Srivastav	
Prof. Shruti		Prof. Arushi Gupta	

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

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

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