Subject Code: KCA 101			
Subject Name: Fundamental of Computers & Emerging Technologies			
Tagging of COs with BLs and KCs			
CO	**Students will be able to:-**	**BL (1,2,3,4,5,6)**	**KC (F,C,P,M)**
CO1	Develop the basic knowledge of computer components and algorithms to solve problems using programming concepts.	Apply	C,P
CO2	Demonstrate the features and types of operating system and computer networks.	Understand	C
CO3	Illustrate the basic services of Internet and applications of Internet of Things.	Understand	C
CO4	Examine the features of Blockchain, Cryptocurrency and benefits of cloud computing.	Understand	C
CO5	Discuss the emerging trends and technologies in the field of Information Technology.	Understand	C

Subject Code: KCA102			
Subject Name: Problem Solving using C			
Tagging of COs with BLs and KCs			
CO	**Students will be able to:-**	**BL (1,2,3,4,5,6)**	**KC (F,C,P,M)**
CO1	Solve basic problems with the help of flowcharts and algorithms.	Apply	C,P
CO2	Write 'C' programs that incorporate use of variables, operators, and expressions along with data types	Apply	F, C, P
CO3	Implement programs using the control statements, functions, arrays, and strings.	Apply	C,P
CO4	Write programs using the advanced concepts like pointers, structures, union, and enumerated data types.	Apply	C,P
CO5	Apply file I/ O operations on Binary and Text Files	Apply	C,P

Subject Code: KCA 103			
Subject Name: Principles of Management & Communication			
CO	**Students will be able to:-**	**BL (1,2,3,4,5,6)**	**KC (F,C,P,M)**
CO1	Describe primary features, processes and principles of management.	Apply	C
CO2	Explain the functions of management in terms of planning, organizing and decision making.	Apply	C
CO3	Illustrate key factors of leadership skill in directing and controlling business resources and processes.	Apply	C
CO4	Exhibit adequate verbal and non-verbal communication skills at workplace.	Apply	F,C
CO5	Demonstrate effective discussion, presentation and writing skills for various tasks and events like meeting, drafting of letter, proposal and report and their presentation etc.	Apply	C,P

Subject Code: KCA-104			
Subject Name: Discrete Mathematics			
Tagging of COs with BLs and KCs			
CO	**Students will be able to:-**	**BL (1,2,3,4,5,6)**	**KC (F,C,P,M)**

CO1	Examine the mathematical and logical notation for basic discrete structures such as Sets, Relations and Functions	Apply	C,P
CO2	Apply mathematical arguments using logical connectives and quantifiers to check the validity of an argument.	Apply	C,P
CO3	Prove properties of Algebraic Structures like Groups, Rings and Fields	Apply	C,P
CO4	Solve recurrences relations and generating functions using mathematical logics.	Apply	C,P
CO5	Illustrate the concept of combinatorics to solve basic problems in discrete mathematics	Analyse	C,P

Subject Code: KCA-105			
Subject Name: Computer Organization and Architecture			
Tagging of COs with BLs and KCs			
CO	**Students will be able to:-**	**BL (1,2,3,4,5,6)**	**KC (F,C,P,M)**
CO1	Determine the functional units of digital system and operations performed by arithmetic and logical unit.	Apply	C,P
CO2	Demonstrate the various processor organisations with different addressing modes.	Apply	C,P
CO3	Examine the organizations of control unit along with Instruction execution stages and pipeline concept.	Apply	C,P
CO4	Analyse the different types of memories and its organization.	Analyse	C,P
CO5	Illustrate the modes of communication between IO devices and CPU.	Apply	C,P

Subject Code: KCA151			
Subject Name: Problem Solving Using C			
Tagging of COs with BLs and KCs			
CO	**Students will be able to:-**	**BL (1,2,3,4,5,6)**	**KC (F,C,P,M)**
CO1	Demonstrate Integrated Development Environment (IDE) for compilation, debugging and execution of C program.	Apply	C,P
CO2	Write programs using variables, operators, and expressions along with data types.	Apply	C,P
CO3	Implement programs for decision control structures, loops, and arrays.	Apply	C,P
CO4	Implement concepts of structure, pointer and user defined function.	Apply	C,P
CO5	Write programs using graphics and file handling operations.	Apply	C,P

Subject Code: KCA-152			
Subject Name: Computer Organization & Architecture Lab			
CO	**Students will be able to:-**	**BL (1,2,3,4,5,6)**	**KC (F,C,P,M)**
CO1	Examine the output of the basic logic gates for different combinations of input.	Apply	C, P
CO2	Demonstrate various combinational circuits for binary arithmetic operations and code converter	Apply	C, P

CO3	Illustrate combinational circuits and sequential circuits such as encoders/decoders, multiplexers/de-multiplexers, and flip-flops	Apply	C, P
CO4	Implement 2-bit Arithmetic Logic Unit using logic gates and multiplexers	Apply	C, P

Subject Code: KCA 101													
Subject Name: Fundamental of Computers & Emerging Technologies													
CO-PO/APO Matrix													
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	APO 1	APO 2
CO1	3	2	-	-	2	-	-	-	-	-	-	-	2	-
CO2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
CO3	3	-	1	2	2	-	1	-	-	1	1	-	-	-
CO4	3	-	-	2	2	-	1	-	-	-	-	-	-	1
CO5	3	-	1	3	3	-	2	-	-	1	-	-	-	-
PO Target	3	2	1	2.33	2.25	-	1.33	-	-	1	1	-	2	1

Subject Code: KCA102													
Subject Name: Problem Solving using C													
CO-PO/APO Matrix													
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	APO 1	APO 2
CO1	3	3	-	-	-	-	3	-	2	-	1	1	3	-
CO2	3	2	-	-	-	-	2	-	-	-	1	1	3	-
CO3	3	2	-	-	-	-	2	-	-	-	1	1	3	-
CO4	3	2	-	-	-	-	2	-	-	-	1	1	3	-
CO5	3	2	-	-	-	-	2	-	-	-	1	1	3	-
PO Target	3	2.2	-	-	-	-	2.2	-	2	-	1	1	3	-

Subject Code: KCA 103														
Subject Name: Principles of Management & Communication														
CO-PO/APO Matrix														
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	APO 1	APO 2
CO1	-	-	-	-	-	-	1	-	-	-	2	-	-	-
CO2	-	-	-	-	-	-	1	-	-	-	2	-	-	-
CO3	-	-	-	-	-	-	2	-	-	-	2	-	-	-
CO4	-	-	-	-	-	-	2	-	3	-	2	-	-	-
CO5	-	-	-	-	-	-	2	-	3	-	2	-	-	-
PO Target	-	-	-	-	-	-	1.6	-	3	-	2	-	-	-

Subject Code: KCA-104													
Subject Name: Discrete Mathematics													
CO-PO/APO Matrix													
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	APO 1	APO 2
CO1	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO2	3	2	-	-	-	-	2	-	-	-	-	-	-	-
CO3	3	2	-	-	-	-	-	-	-	-	-	-	-	-

CO4	3	2	-	-	-	-	1	-	-	-	-	-	-	-
CO5	3	2	-	-	-	-	2	-	-	-	-	-	-	-
PO Target	3	2	-	-	-	-	1.6	-	-	-	-	-	-	-

Subject Code: KCA-105														
Subject Name: Computer Organization and Architecture														
CO-PO/APO Matrix														
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	APO 1	APO 2
CO1	3	1	-	-	-	-	1	-	-	-	-	-	-	-
CO2	3	1	-	-	-	-	1	-	-	-	-	-	-	-
CO3	3	1	-	-	-	-	1	-	-	-	-	-	-	-
CO4	3	1	-	-	-	-	1	-	-	-	-	-	-	-
CO5	3	1	-	-	-	-	1	-	-	-	-	-	-	-
PO Target	3	1	-	-	-	-	1	-	-	-	-	-	-	-

Subject Code: KCA151														
Subject Name: Problem Solving Using C														
CO-PO/APO Matrix														
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	APO 1	APO 2
CO1	-	2	-	-	-	-	1	-	-	-	1	1	3	-
CO2	3	2	-	-	-	-	2	-	-	-	1	1	3	-
CO3	3	2	-	-	-	-	2	-	-	-	1	1	3	-
CO4	3	2	-	-	-	-	2	-	-	-	1	1	3	-
CO5	3	2	-	-	-	-	2	-	-	-	1	1	3	-
PO Target	3	2	-	-	-	-	1.8	-	-	-	1	1	3	-

Subject Code: KCA-152														
Subject Name: Computer Organization & Architecture Lab														
CO-PO/APO Matrix														
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	APO 1	APO 2
CO1	3	2	-	-	-	-	2	-	-	-	-	-	-	-
CO2	3	2	-	-	-	-	1	-	-	-	-	-	-	-
CO3	3	2	-	-	-	-	1	-	-	-	-	-	-	-
CO4	3	2	-	-	-	-	1	-	-	-	-	-	-	-
PO Target	3	2	-	-	-	-	1.25	-	-	-	-	-	-	-

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**
Course Name: Artificial Intelligence **Course Code: KCA301** **Course Coordinator Name: Dr. Akash Rajak**

CO - PO/PSO/APO Matrix

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

Faculty Members Teaching the Course	Signature
1. Dr. Akash Rajak	
2. Prof. Prashant Agarwal	
3. Prof. Neelam Rawat	

Signature of Course Coordinator | Assoc. 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.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**
Course Name: Software Engineering **Course Code: KCA302** **Course Coordinator Name: Dr. Amit Kumar**

CO - PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	–	–	–	–	–	–	–	–	–	–	–	1
CO2	3	2	–	1	–	1	2	–	2	–	–	–	–	2
CO3	3	3	–	2	–	–	–	–	2	–	–	–	–	3
CO4	3	–	–	–	–	–	2	–	–	–	–	–	–	2
CO5	3	2	–	1	–		–	2	–	–	–	–	–	1
PO Target	3	2.25	–	1.33	–	1	2	2	2	–	–	–	–	1.8

Faculty Members Teaching the Course	Signature
1. Dr. Amit Kumar	
2. Prof. Praveen Gupta	

Signature of Course Coordinator Assoc. 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.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**

Course Name: Computer Networks **Course Code: KCA303** **Course Coordinator Name: Prof. Shalika**

CO - PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	–	–	–	–	–	2	–	–	–	–	–	–	–
CO2	3	2	–	–	–	–	1	–	–	–	–	–	–	–
CO3	3	2	–	–	–	–	2	–	–	–	–	–	–	–
CO4	2	1	–	–	–	1	1	–	–	–	–	–	–	–
CO5	2	1	–	–	–	1	1	–	–	–	–	–	–	–
PO Target	2.6	1.5	–	–	–	1	1.4	–	–	–	–	–	–	–

Faculty Members Teaching the Course	Signature
1. Dr. Sangeeta Arora	
2. Prof. Shalika	

Signature of Course Coordinator **Assoc. 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.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**

Course Name: Cloud Computing **Course Code: KCA014** **Course Coordinator Name: Dr. Shashank Bharadwaj**

CO - PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1	2	3	4	5	6	7	8	9	10	11	12	APO1	APO2
CO2	3	–	2	3	3	1	2	2	1	2	3	2	–	3
CO3	3	2	3	3	3	–	3	1	1	1	3	2	–	3
CO4	3	2	3	3	3	–	3	1	1	1	3	2	–	3
CO5	3	2	3	3	3	–	3	1	1	1	3	2	–	3
PO Target	2	–	1	–	–	2	1	–	2	2	1	–	–	1

Faculty Members Teaching the Course	Signature
1. Dr. Shashank Bharadwaj	
2. Prof. Praveen Gupta	

Signature of Course Coordinator **Assoc. 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.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**
Course Name: Web Technology **Course Code: KCA021** **Course Coordinator Name: Dr. Vipin Kumar**

CO No.	Programme Outcome (PO)												APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	–	–	1	–	1	–	1	–	–	–	–	1	–	1
CO2	–	–	1	–	1	–	2	–	–	–	–	2	–	2
CO3	–	–	2	–	2	–	2	–	–	–	–	2	–	2
CO4	–	–	1	–	1	–	2	–	–	–	–	1	–	1
CO5	–	–	2	–	3	–	2	–	–	–	–	3	–	3
PO Target	–	–	1.4	–	1.6	–	1.8	–	–	–	–	1.8	–	1.8

Faculty Members Teaching the Course	Signature
1. Dr. Vipin Kumar	
2. Dr. Ankit Verma	
3. Prof. Divya Singhal	

Signature of Course Coordinator **Assoc. 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.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**

Course Name: Artificial Intelligence Lab **Course Code: KCA351** **Course Coordinator Name: Dr. Akash Rajak**

CO - PO/PSO/APO Matrix

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

Faculty Members Teaching the Course	Signature
1. Dr. Akash Rajak	
2. Prof. Prashant Agarwal	
3. Prof. Neelam Rawat	

Signature of Course Coordinator **Assoc. 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.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**

Course Name: SE Lab **Course Code: KCA352** **Course Coordinator Name: Dr. Amit Kumar**

CO - PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	3	—	—	—	—	—	—	3	—	2	—	—	2
CO2	3	3	2	1	2	—	—	—	3	—	2	—	—	2
CO3	2	1	2		2	—	3	—	3	—	2	3	—	3
PO Target	2.33	2.33	2.00	1.00	2.00	—	3.00	—	3.00	—	2.00	3.00	—	2.33

Faculty Members Teaching the Course	Signature
1. Dr. Amit K Gupta	
2. Dr. Amit Kumar	
3. Prof. Praveeen Gupta	

Signature of Course Coordinator **Assoc. 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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**
Course Name: Mini Project **Course Code: KCA353** **Course Coordinator Name: Dr. Sangeeta Arora**

CO - PO/PSO/APO Matrix

CO No.	Programme Outcome (PO)												APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1	2	2	–	–	–	3	–	1	–	–	3	–	3
CO2	1	2	1	–	–	–	3	–	3	–	–	3	–	3
CO3	2	2	2	–	–	–	3	–	2	–	–	3	–	3
CO4	3	2	2	–	–	–	3	–	2	–	–	3	–	3
CO5	1	1	2	–	–	–	3	–	3	–	–	3	–	3
PO Target	1.6	1.8	1.8	–	–	–	3	–	2.2	–	–	3	–	3

Faculty Members Teaching the Course	Signature
1. Dr. Sangeeta Arora	
2. Dr. Shashank Bharadwaj	
3. Prof. Shalika	

Signature of Course Coordinator **Assoc. 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.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**
Course Name: Artificial Intelligence **Course Code: KCA301** **Course Coordinator Name: Dr. Akash Rajak**

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 knowledge of the building blocks of AI as presented in terms of intelligent agents.	PO1	BL2	F,C
CO2	Sketch the problem as state space graph with various searching techniques to solve a specific problem.	PO1, PO2, PO3, PO4, APO1	BL3	F,C,P
CO3	Demonstrate knowledge and its representation in real world with logical reasoning steps.	PO1, PO2, PO3, PO4, PO5	BL3	F,C,P
CO4	Construct AI algorithm for real world problems with different machine learning techniques.	PO1, PO2, PO3, PO4, PO5, APO1	BL3	F,C,P
CO5	Illustrate knowledge about state-of-the-art algorithms used in pattern recognition area.	PO1, PO2, PO3, PO4, PO5, APO1	BL3	F,C,P

Faculty Members Teaching the Course	Signature
1. Dr. Akash Rajak	
2. Prof. Prashant Agarwal	
3. Prof. Neelam Rawat	

Signature of Course Coordinator Assoc. 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 Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**
Course Name: Software Engineering **Course Code: KCA302** **Course Coordinator Name: Dr. Amit 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	Describe Software Engineering Concepts and SDLC models.	PO1, PO2, APO2	BL2	F,C,P
CO2	Prepare Software Requirement Specification (SRS) with Modelling tools and Quality standards.	PO1, PO2, PO4, PO6, PO7, PO 9, APO2	BL3	F,C,P
CO3	Analyse design concepts to software development with software metrics methods.	PO1, PO2, PO4, PO9, APO2	BL4	F,C,P
CO4	Categorize software testing techniques and its implementation.	PO1, PO7, APO2	BL4	F,C,P
CO5	Contrast Software project management activities with its parameters such as Cost, Efforts, Schedule/ Duration.	PO1, PO2, PO4, PO8, APO2	BL4	F,C,P

Faculty Members Teaching the Course	Signature
1. Dr. Amit Kumar	
2. Prof. Praveen Gupta	

Signature of Course Coordinator **Assoc. 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.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**
Course Name: Computer Networks **Course Code: KCA303** **Course Coordinator Name: Prof. Shalika**

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 communication models TCP/IP, ISO-OSI model, network topologies along with communicating devices and connecting media.	PO1, PO7	BL2	F,C
CO2	Apply knowledge of error detection, correction and learn concepts of flow control along with error control.	PO1, PO2, PO7	BL3	C,P
CO3	Apply IP addressing techniques, subnetting along with network routing protocols and algorithms.	PO1, PO2, PO7	BL3	C,P
CO4	Explore transport layer protocols and their layout along with congestion control to maintain Quality of Service.	PO1, PO2, PO6, PO7	BL3	C,P
CO5	Understand applications-layer protocols and elementary standards of cryptography & network security.	PO1, PO2, PO6, PO7	BL2	F,C

Faculty Members Teaching the Course	Signature
1. Dr. Sangeeta Arora	
2. Prof. Shalika	

Signature of Course Coordinator **Assoc. 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.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**
Course Name: Cloud Computing **Course Code: KCA014** **Course Coordinator Name: Dr. Shashank Bharadwaj**

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	Illustrate the concepts of Cloud Computing, key technologies, strengths, and limitations of cloud computing.	PO1, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, APO2	BL3	C,P
CO2	Apply cloud computing driven commercial systems such as AWS and other business cloud applications in real life.	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO9, PO10, PO11, PO12, APO2	BL3	C,P
CO3	Analyze the knowledge and applications of cloud computing in business, education and in personal.	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO9, PO10, PO11, PO12, APO2	BL4	C,P
CO4	Connect with the concept of virtualization in cloud computing.	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO9, PO10, PO11, PO12, APO2	BL4	C,P
CO5	Discuss the security and privacy issues in cloud computing	PO1, PO3, PO6, PO7, PO9, PO10, PO11, APO2	BL2	C

Faculty Members Teaching the Course	Signature
1. Dr. Shashank Bharadwaj	
2. Prof. Praveen Gupta	

Signature of Course Coordinator **Assoc ... 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.

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**
Course Name: Web Technology **Course Code: KCA021** **Course Coordinator Name: Dr. Vipin 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	Construct static web pages using HTML and CSS.	PO3, PO5, PO7, PO12, APO2	BL3	C,P
CO2	Develop interactive web page using JavaScript.	PO3, PO5, PO7, PO12, APO2	BL3	C,P
CO3	Develop dynamic web applications using servlet and JSP.	PO3, PO5, PO7, PO12, APO2	BL3	C,P
CO4	Illustrate Spring-based Java applications using Java configuration, XML configuration, annotation-based configuration, beans and their scopes, and properties.	PO3, PO5, PO7, PO12, APO2	BL4	C,P
CO5	Test web services using Spring Boot and REST API	PO3, PO5, PO7, PO12, APO2	BL5	C,P

Faculty Members Teaching the Course	Signature
1. Dr. Vipin Kumar	
2. Dr. Ankit Verma	
3. Prof. Divya Singhal	

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

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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Department of Computer Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**
Course Name: Artificial Intelligence Lab **Course Code: KCA351** **Course Coordinator Name: Dr. Akash Rajak**

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	Develop AI Game problems using Python such as Water-Jug and Missionaries-Cannibal	PO1, PO2, PO5, PO11, APO1	BL3	C,P
CO2	Analyse AI searching algorithms such as BFS & DFS using python	PO1, PO2, PO5, PO11, APO1	BL4	C,P
CO3	Implement Knowledge representation techniques using Pytholog library	PO1, PO2, PO5, PO11, APO1	BL3	C,P
CO4	Demonstrate machine learning algorithms of Classification & Clustering techniques	PO1, PO2, PO3, PO4, PO5, PO11, APO1	BL3	C,P

Faculty Members Teaching the Course	Signature
1. Dr. Akash Rajak	
2. Prof. Prashant Agarwal	
3. Prof. Neelam Rawat	

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

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

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Department of Computer Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**
Course Name: SE Lab **Course Code: KCA352** **Course Coordinator Name: Dr. Amit 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	Prepare a SRS document in line with the IEEE recommended standards.	PO1, PO2, PO9, PO11, APO2	BL3	P,M
CO2	Sketch the graphic representation of various UML diagrams using designing tools.	PO1, PO2, PO3, PO4, PO5, PO9, PO11, APO2	BL3	P,M
CO3	Prepare test cases for given problem.	PO1, PO2, PO3, PO5, PO7, PO9, PO11, PO12, APO2	BL4	P,M

Faculty Members Teaching the Course	Signature
1. Dr. Amit K Gupta	
2. Dr. Amit Kumar	
3. Prof. Praveeen Gupta	

Signature of Course Coordinator **Assoc... 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 Applications

Program Name: MCA **Academic Session: 2023-24** **Year: II** **Semester: III**
Course Name: Mini Project **Course Code: KCA353** **Course Coordinator Name: Dr. Sangeeta Arora**

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	Demonstrate the software project using life cycle models.	PO1, PO2, PO3, PO7, PO9, PO12, APO2	BL3	C,P
CO2	Plan the SRS document as per project requirements.	PO1, PO2, PO3, PO7, PO9, PO12, APO2	BL4	C,P
CO3	Apply suitable design technique for designing software	PO1, PO2, PO3, PO7, PO9, PO12, APO2	BL3	C,P
CO4	Analyse the project by using a programming language.	PO1, PO2, PO3, PO7, PO9, PO12, APO2	BL4	C,P
CO5	Design report and able to present their work	PO1, PO2, PO3, PO7, PO9, PO12, APO2	BL3	C,P

Faculty Members Teaching the Course	Signature
1. Dr. Sangeeta Arora	
2. Dr. Shashank Bharadwaj	
3. Prof. Shalika	

Signature of Course Coordinator **Assoc. [illegible] Head DOC** **Signature of Addl. HoD** **Signature of HoD**

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