

SEMESTER –IV

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Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-2024	Semester: 4 th
Course name: Math IV	Course Code: BAS 403	Faculty Name: Dr. Ajay Dixit
Tagging COs with BLs & KCs		
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)
		Knowledge Category (KC)
After completion of the course, the student will be able to		
CO 1	Solve partial differential equations by Lagrange, Charpit and other particular methods..	Solve Procedural Conceptual
CO 2	Apply the method of separation of variables to solve Wave, Heat and Laplace equation, Application of Fourier transform.	Apply Conceptual, Procedural
CO 3	Determine moments, correlation, linear regression lines and obtain best fitting curves to the given data.	Determine Conceptual, Procedural
CO 4	Apply the concept of probability to solve discrete and continuous probability problems.	Apply Conceptual, Procedural
CO 5	Apply the theory of sampling to solve t-test, z-test and Chi square test problems.	Apply Conceptual, Procedural

Please Note (Reference: OBE Guidelines wef. Session 2023 – 24)

- ❖ 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

Mapping of Course outcomes with Program outcomes CO-POs Matrix

Math IV (BAS 403)

Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO1	2	2	-	-	-	-	-					2	1	-
CO2	2	2	2	-	-	-	-					2	-	1
CO3	2	2	2	2	2	-	-					2	1	1
CO4	2	2	1	1	1	-	-					1	-	1
CO5	2	1	2	2	2	2	2					2	1	-
PO Target	2	1.8	1.7 5	1.6	1.6	2	2					1.8	1	1

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Signature of Course Coordinator

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Signature of Addl. HoD

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Signature of HoD

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

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

Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-2024	Semester: 4 th	
Course name: Technical Communication	Course Code: BAS401	Faculty Name: Dr. Sonia Gouri	
Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	UNDERSTAND the nature and objective of Technical Communication relevant for the workplace as Engineers.	Understand	Conceptual
CO 2	DEVELOP an understanding of key concepts of writing, designing, and speaking.	Apply	Procedural
CO 3	UTILIZE the technical writing skills for the purposes of Technical Communication and its exposure in various dimensions.	Apply	Procedural
CO 4	BUILD UP interpersonal communication traits that will make the transition from institution to workplace smoother and help them to excel in their jobs.	Apply	Conceptual
CO 5	APPLY technical communication to build their personal brand and handle crisis communication.	Apply	Conceptual

Please Note (Reference: OBE Guidelines wef. Session 2023 – 24)

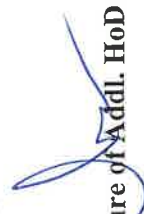
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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
Technical Communication (BAS401)														
Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO1	-	-	-	-	-	-	-	-	3	3	-	-	-	-
CO2	-	-	-	-	-	-	-	-	3	3	-	-	-	-
CO3	-	-	-	-	-	-	-	-	3	3	-	-	-	-
CO4	-	-	-	-	-	-	-	-	3	3	-	-	-	-
CO5	-	-	-	-	-	-	-	-	3	3	-	-	-	-
PO Target	-	-	-	-	-	-	-	-	3	3	-	-	-	-


 Signature of Course Coordinator

Dr. Sonia Gouri


 Signature of Addl. HoD


 Signature of HoD

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Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-2024	Semester: 4 th	
Course name: Operating System	Course Code: BCS401	Faculty Name: Dr. Meeta Chaudhry	
Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Understand the Operating System Function, classification and structure.	Understand	Factual, Conceptual
CO 2	Illustrate the principles of concurrency control and process synchronization problem.	Apply	Conceptual, Procedural
CO 3	Apply the principle of CPU scheduling and deadlock handling techniques.	Apply	Conceptual, Procedural
CO 4	Analyze the various memory management schemes.	Analyze	Conceptual, Procedural
CO 5	Understand various I/O management, Disk Scheduling and File Systems concepts.	Understand	Conceptual, Procedural

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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
Operating System (BCS 401)														
Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO1	3	--	-	-	-	-	-	-	-	-	-	3	-	-
CO2	3	3	1	2	-	-	-	-	-	-	-	2	-	-
CO3	3	2		2	-	-	-	-	-	-	-	3	1	-
CO4	3	3		2	-	-	-	-	-	-	-	2	1	-
CO5	3	1			-	-	-	-	-	-	-	2	-	-
PO Target	3.00	2.25	1.00	2.00	-	--	-	-	-	-	-	2.40	1.00	-


Signature of Course Coordinator


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Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-2024	Semester: 4 th
Course name: Theory of Automata and Formal Languages	Course Code: BCS402	Faculty Name: Mr. Jaswinder Singh
Tagging COs with BLs & KCs		
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)
After completion of the course, the student will be able to		
CO 1	Acquire a full understanding and applicability of Automata Theory as the basis of all computer science languages design	Understand(K1,K2)
CO 2	Identify different formal languages and design the recognizer for regular languages to establish their applicability in real life.	Apply(K3)
CO 3	Analyze & Design grammars for different formal languages.	Apply(K4)
CO 4	Understand the designing of Pushdown Automata and Turing machines.	Analyze(K4,K5)
CO 5	Determine the decidability and intractability of computational problems.	Understand(K5,K6)
		Knowledge Category (KC)
		Factual, Conceptual
		Conceptual, Procedural
		Conceptual, Procedural
		Conceptual, Procedural
		Conceptual, Procedural

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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
Theory of Automata and Formal Languages (BCS 402)														
Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO1	3	2	2	2	1	-	-	-	-	1	1	1	2	2
CO2	2	3	3	2	1	-	-	-	-	1	1	1	2	2
CO3	2	2	3	3	1	-	-	-	-	1	1	1	2	2
CO4	2	3	3	2	1	-	-	-	-	1	1	1	1	1
CO5	1	3	2	3	1	-	-	-	-	1	1	1	1	1
PO Target	2	2.6	2.6	2.4	1					1	1	1	1.6	1.6



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Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-2024	Semester: 4 th
Course name: Object Oriented Programming with Java	Course Code: BCS403	Faculty Name: Vinay Kumar
Tagging COs with BLs & KCs		
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)
Knowledge Category (KC)		
After completion of the course, the student will be able to		
CO 1	Illustrate object-oriented programming concepts using Java.	Apply
CO 2	Implement the concepts of exception handling, file handling, and multi-threading in Java.	Apply
CO 3	Apply new java features to build java programs.	Apply
CO 4	Analyze java programs with Collection Framework.	Analyze
CO 5	Illustrate Web Services with Spring Boot and Spring Framework concepts.	Analyze
		Conceptual, Procedural
		Conceptual, Procedural
		Conceptual, Procedural
		Conceptual, Procedural
		Conceptual, Procedural
		Conceptual, Procedural

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Mapping of Course outcomes with Program outcomes CO-POs Matrix														
Object Oriented Programming with Java (BCS 403)														
Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO1	1	-	2	-	1	-	-	-	-	-	-	2	-	-
CO2	2	-	1	-	2	-	-	-	-	-	-	2	-	-
CO3	2	1	1	1	2	-	-	-	-	-	-	3	1	-
CO4	2	2	2	2	2	-	-	-	-	-	-	3	-	-
CO5	1	1	1	-	3	-	-	-	-	-	-	3	2	-
PO Target	1.6	1.33	1.4	1.5	2	-	-	-	-	-	-	2.6	1.5	-

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Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-24	Semester: IV
Course name: Operating System Lab	Course Code: BCS 451	Faculty Name: Dr. Meeta Chaudhary

Tagging COs with BLs & KCs		
CO No.	Statement of Course Outcome	Knowledge Category (KC)
After completion of the course, the student will be able to		
CO 1	Apply the knowledge of different OS and work on basic Unix commands and shell programming.	Conceptual, Procedural
CO 2	Implement various CPU scheduling algorithms	Procedural
CO 3	Implement memory management, process synchronization techniques and page replacement techniques.	Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
Operating System Lab (BCS-451)														
Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO-1	3	-	-	-	3	-	-	1	1	1	1	2	-	-
CO-2	3	3	1	2	2	-	-	1	2	2	1	2	1	-
CO-3	3	3	-	2	2	-	-	1	2	2	1	2	1	-
PO Target	3.00	3.00	1.00	2.00	2.33	-	-	1.00	1.67	1.67	1.00	2.00	1.00	-

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Signature of Course Coordinator

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Department for Computer Science and Information Technology

Program Name: B. Tech	Academic Session: 2023-2024	Semester: 4 th
Course name: Object Oriented Programming with Java Lab	Course Code: BCS452	Faculty Name: Vinay Kumar
Tagging COs with BLs & KCs		
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)
After completion of the course, the student will be able to		
CO 1	Implement the basic concepts of OOPs.	Apply
CO 2	Demonstrate the concepts of exception handling, file handling, multi-threading, collection framework and new features of Java.	Apply
CO 3	Test Web services using Spring Framework and Spring Boot.	Evaluate
		Knowledge Category (KC)
		Conceptual, Procedural
		Conceptual, Procedural
		Conceptual, Procedural

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KIET Group of Institutions, Delhi – NCR, Ghaziabad

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
Object Oriented Programming with Java Lab (BCS 452)														
Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO1	1	-	2	-	3	-	-	-	2	-	-	2	1	-
CO2	2	-	1	-	3	-	-	-	2	-	-	2	2	-
CO3	2	1	-	-	3	-	-	-	2	-	-	2	2	-
PO Target	1.6	1	1.5	-	3	-	-	-	2	-	-	2	1.6	-


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Department for Computer Science and Information Technology

Program Name: B.Tech.	Academic Session: 2023-24	Semester: IV
Course name: Cyber Security Workshop	Course Code: BCC-401	Faculty Name: Mrs. Supriya Dubey

Tagging COs with BLs & KCs					
CO No.	Statement of Course Outcome			Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to					
CO1	Understand various web application protocols used in data transmission and demonstrate by capturing and analyzing network transmission.			Apply	Procedural
CO2	Understand principles of web security monitoring and analyzing the nature of attacks through cyber/computer forensics software/tools			Apply	Procedural
CO3	Recognize web application security vulnerabilities and demonstrate how to determine if they are present in web applications using cyber/computer forensics software/tools.			Apply	Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
Cyber Security Workshop (BCC 401)														
Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO1	3	2	-	2	3	1	2	3	-	-	-	2	2	-
CO2	3	3	-	2	3	1	2	3	-	-	-	2	2	-
CO3	3	3	-	2	3	1	2	3	-	-	-	2	2	-
PO Target	3	3	-	2	3	1	2	3	-	-	-	2	2	-

Signature of Course Coordinator

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Department for Computer Science and Information Technology

Program Name: B.Tech.	Academic Session: 2023-24	Semester: IV
Course name: Cyber Security	Course Code: BCC-401	Faculty Name: Mrs. Supriya Dubey

Tagging COs with BLs & KCs	
CO No.	Statement of Course Outcome
After completion of the course, the student will be able to	
CO1	Understand the basic concepts and terminology of cyber security and cyber-crimes.
CO2	Understand the security issues and preventive measures in mobile communication.
CO3	Understand various cyber-attacks along with the tools and methods used in cyber crime
CO4	Understand the concepts of cyber forensics and its implication in Social Networking websites
CO5	Understand the cyber security policies and cyber laws

Mapping of Course outcomes with Program outcomes CO-POs Matrix												
Course Name (Course Code)												
Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12
CO1	2	1	-	3	-	-	1	2	-	-	-	2
CO2	2	1	-	3	1	-	1	2	-	-	-	2
CO3	2	1	-	3	3	-	1	2	-	-	-	2
CO4	2	1	-	3	-	-	1	2	-	-	-	2
CO5	1	1	-	3	1	3	1	3	-	-	-	2
PO Target	1.80	1	-	3	1.66	3	1	2.20	-	-	-	2

Signature of Course Coordinator

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SEMESTER- VI													
Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KCS601	Software Engineering	3	1	0	30	20	50		100		150	4
2	KIT601	Data Analytics	3	1	0	30	20	50		100		150	4
3	KCS603	Computer Networks	3	1	0	30	20	50		100		150	4
4	Deptt- Elective-III	Departmental Elective-III	3	0	0	30	20	50		100		150	3
5		Open Elective-I	3	0	0	30	20	50		100		150	3
6	KCS651	Software Engineering Lab	0	0	2				25		25	50	1
7	KIT651	Data Analytics Lab	0	0	2				25		25	50	1
8	KCS653	Computer Networks Lab	0	0	2				25		25	50	1
9	KNC601/ KNC602	Constitution of India, Law and Engineering / Indian Tradition, Culture and Society	2	0	0	15	10	25		50			
10		MOOCs (Essential for Hons. Degree)											
		Total	0	3	6							900	21

Departmental Elective-I

1. KIT-051 Statistical Computing
2. KIT-052 Compiler Design
3. KCS-053 Computer Graphics
4. KCS-054 Object Oriented System Design

Departmental Elective-II

5. KCS-055 Machine Learning Techniques
6. KCS-056 Application of Soft Computing
7. KCS-057 Augmented & Virtual Reality
8. KCS-058 Human Computer Interface

Departmental Elective-III

1. KCS-061 Big Data
2. KCS-062 Image Processing
3. KIT -061 Blockchain Architecture Design
4. KCS-064 Data Compression

Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-24	Semester: VI
Course name: Software Engineering	Course Code: KCS-601	Faculty Name: Dr. Rohit Vashisht

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO-1	Explain various software characteristics and different types of software development models.	K2	Conceptual
CO-2	Prepare the contents of SRS and apply basic software quality assurance practices.	K3	Procedural
CO-3	Compare various methods for software design.	K3	Procedural
CO-4	Illustrate various software testing techniques.	K3	Procedural
CO-5	Analyze various software maintenance and project management techniques.	K4	Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
Course Name (Course Code)														
KCS-601	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO-1	1	1	1	2		1				1	1	2	3	1
CO-2	1	2	1	1		1		2	1	2	1	2	3	1
CO-3	2	2	2	2	2	1				2	1	2	3	1
CO-4	2	2	2	2	2	1		1	1	1	1	2	3	1
CO-5	2	2	2	2		1				1	1	1	3	1
PO Target	1.6	1.8	1.6	1.8	2	1	0	1.5	1	1.4	1	1.8	3	1

Signature of Course Coordinator

Signature of Addl. HoD

Signature of HbD

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Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-24	Semester: VI
Course name: Data Analytics	Course Code: KIT601	Faculty Name: Deep Kumar

Tagging COs with BLs & KCs	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Discuss various concepts of data analytics pipeline.	Understand	Factual, Conceptual, Procedural
CO2	Apply classification and regression techniques.	Apply	Conceptual, Procedural
CO3	Apply mining techniques on streaming data.	Apply	Conceptual, Procedural
CO4	Compare different clustering and frequent pattern mining algorithms.	Apply	Conceptual, Procedural
CO5	Analyze the concept of data analytics using various tools.	Analyze	Conceptual, Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
Data Analytics (KIT601)														
Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO1	2	2	1	-	-	-	-	-	-	-	-	-	-	-
CO2	2	3	3	2	2	-	-	-	-	-	1	1	-	2
CO3	2	2	3	2	3	-	-	-	-	-	1	-	-	1
CO4	2	3	2	3	2	-	-	-	-	-	-	1	-	1
CO5	2	3	3	3	2	-	-	-	2	-	1	2	-	2
PO Target	2	2.6	2.4	2.5	2.25				2		1	1.33		1.5

Signature of Course Coordinator

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.

Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-24	Semester: VI
Course name: Computer Networks	Course Code: KCS 603	Faculty Name: Ambrish Gangal
Tagging COs with BLs & KCs		
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)
Knowledge Category (KC)		
After completion of the course, the student will be able to		
1	Understand the concept of data transmission and the structure of networks.	Understand
2	Analyse various link layer protocols.	Analyze
3	Apply the concept of routing and IP addressing in network layer.	Apply
4	Study of transport layer, session layer and presentation layer of OSI model and its functionalities.	Analyze
5	Evaluate the role of application layer protocols and its services.	Evaluate
		C,P
		F,C,P
		C,P,M
		F,C,P
		C,P,M

Please Note (Reference: OBE Guidelines wef. Session 2023 – 24)

- 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

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
Course Name : Computer Networks (KCS 603)														
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO 1	2	-	-	-	-	-	-	-	-	-	-	2	-	-
CO 2	2	2	1	-	-	-	-	-	-	-	-	2	-	-
CO 3	3	3	2	1	-	-	-	-	-	-	-	2	-	-
CO 4	3	-	-	-	-	-	-	-	-	-	-	2	-	-
CO 5	2	1	2	2	2	2	-	-	-	-	-	2	-	-
PO Target	2.4	2	1.67	1.5	2	2						2		

Signature of Course Coordinator

Signature of Addl. HoD

Signature of HoD

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

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

Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-24	Semester: 6th
Course name: Blockchain Architecture Design	Course Code: KIT-061	Faculty Name: Ms. Shrankhla Saxena
Tagging COs with BLs & KCs		
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)
Knowledge Category (KC)		
After completion of the course, the student will be able to		
CO1	Apply the Blockchain architecture along with its primitive.	Apply Factual, Conceptual
CO2	Apply consensus of blockchain along with scalability aspects.	Apply Conceptual, Procedural,
CO3	Design the Hyperledger framework.	Analyze Conceptual, Procedural,
CO4	Apply Blockchain techniques for Finance and Trade/Supply use cases.	Apply Conceptual, Procedural,
CO5	Apply Blockchain techniques for use cases of Government activities.	Apply Conceptual, Procedural,

Please Note (Reference: OBE Guidelines wef. Session 2023 – 24)

- ❖ 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

Mapping of Course outcomes with Program outcomes CO-POs Matrix

Course Name (Course Code)														
Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO1	2	2		1		1	1					1	-	-
CO2	1	2		1		1	1					2	-	-
CO3	1	2		1	2	1	1					1	1	2
CO4	1	2	1	1	1	3	2	2				2	1	2
CO5	1	2	1	1	1	3	2	2				3	1	2
PO Target	1.2	2	1	1	1.3	1.8	1.4	2				1.8	1	2

Signature of Course Coordinator

Signature of Addl. HoD

Signature of HoD

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

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- ❖ If there is no correlation, then put a “-” (dash).

Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-24	Semester: 6th	
Course name: Software Project Management	Course Code: KOE068	Faculty Name: Latika Sharma	
Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Exercise the project planning activities and the key phases of project management.	Understand	Conceptual
CO2	Apply different software process models and cost estimation models.	Apply	Conceptual
CO3	Examine various project activities to compute critical path for risk analysis.	Analyze	Procedural
CO4	Monitor and Control project activities.	Analyze	Procedural
CO5	Adapt professional practices in staff selection and team building for successful software management.	Apply	Conceptual

Please Note (Reference: OBE Guidelines wef. Session 2023 – 24)

- ❖ 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

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
Software Project Management (KOE068)														
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO1	2	-	2	-	-	-	-	-	1	1	2	1	2	-
CO2	2	2	2	2	2	2	-	-	2	-	3	2	2	-
CO3	3	3	2	3	2	2	-	-	2	-	2	2	2	-
CO4	3	3	2	2	2	2	-	-	2	-	2	2	2	-
CO5	1	1	1	-	-	-	1	-	3	2	2	2	2	-
PO Target	2.20	2.25	1.80	2.30	2.00	2.00	1.00	-	2.00	1.50	2.20	1.80	2.00	-

Signature of Course Coordinator

Signature of Addl. HoD

Signature of HoD

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

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- ❖ If there is no correlation, then put a “-” (dash).

Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-24	Semester: VI
Course name: Software Engineering Lab	Course Code: KCS-651	Faculty Name: Dr. Rohit Vashisht

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO-1	Discover ambiguities, inconsistencies and incompleteness in SRS document and to identify its functional and non-functional requirements.	K3	Procedural
CO-2	Demonstrate Use Case diagrams, class diagram and other UML diagram through a problem statement.	K3	Procedural
CO-3	Articulate the use of modern engineering tools for software design and testing.	K3	Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix

		Course Name (Course Code)											
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12
KCS-651													
CO-1	2	2	1	2					1	1	2	1	
CO-2	1	2	2	2	2					1	2	1	
CO-3	2	2	2	2	3	2				1	1	1	
PO Target	1.67	2	2.34	1.67	2.34	2	0	0	1	1	2	1	0

Signature of Course Coordinator

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.

Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-24	Semester: VI
Course name: Data Analytics Lab	Course Code: KIT651	Faculty Name: Deep Kumar

CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO1	After completion of the course, the student will be able to		
CO2	Understand the basic techniques on various data sources.	Understand	Procedural
CO3	Apply data preprocessing and dimensionality reduction methods on raw data	Apply	Procedural
CO3	Execution of different algorithms on numeric data for prediction.	Apply	Conceptual, Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix

Data Analytics Lab (KIT651)												
Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12
CO1	2	2	2		2	-	-	-	-	-	-	-
CO2	3	3	3	2	2	-	-	-	1	-	-	-
CO3	3	3	3	2	3	-	-	-	-	-	-	-
PO Target	2.66	2.66	2.66	2	2.33	-	-	-	1	-	-	-

Signature of Course Coordinator

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.

Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-24	Semester: VI
Course name: Computer Networks Lab	Course Code: KCS653	Faculty Name: Ambrish Gangal
Tagging COs with BLs & KCs		
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)
After completion of the course, the student will be able to		
1	Configure and manage network devices and protocols.	C,P
2	Apply network design principles to configure and create efficient and secure network architectures.	C,P
3	Gain proficiency in network simulation and configuration using appropriate tools and techniques.	C,P
		Knowledge Category (KC)

Please Note (Reference: OBE Guidelines wef. Session 2023 – 24)

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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
Course Name : Computer Networks Lab (KCS653)														
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO 1	3	-	-	-	2	-	-	-	2	-	-	2		
CO 2	3	2	3	2	2	-	-	-	2	-	-	2		
CO 3	3	3	3	-	3	-	-	-	2	-	-	2		
PO Target	3	2.5	3	2	2.3				2			2		


 Signature of Course Coordinator


 Signature of Addl. HoD


 Signature of HoD

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Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-24	Semester: VI
Course name: ITCS	Course Code: KNC 602	Faculty Name: Arti Pandey
Tagging COs with BLs & KCs		
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)
		Knowledge Category (KC)
After completion of the course, the student will be able to		
1	Understand the roots of Society State and Polity in India.	Understand Factual, Conceptual
2	Discuss the importance of Indian Literature and Culture Practices.	Understand Factual, Conceptual
3	Correlate the Indian Religion and Philosophy.	Analyze Factual, Conceptual
4	Understand the Science, Management and Indian Knowledge System.	Understand Factual, Conceptual
5	Discuss the Indian ancient culture heritage and its contribution to the World	Understand Factual, Conceptual

Please Note (Reference: OBE Guidelines wef. Session 2023 – 24)

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

KIET Group of Institutions, Delhi – NCR, Ghaziabad

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
Course Name : ITCS (KNC 602)														
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO 1	1	-	-	-	-	1	-	2	-	-	-	2	-	-
CO 2	-	-	-	-	-	-	-	2	-	-	-	2	-	-
CO 3	-	1	-	-	-	-	-	-	2	-	1	2	-	-
CO 4	1	-	-	-	-	2	2	-	-	-	-	2	-	-
CO 5	-	-	-	-	-	-	-	-	2	-	1	2	-	-
PO Target	1	1	-	-	-	1.5	2	2.0	2	-	1	2	-	-


 Signature of Course Coordinator


 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).

INFORMATION TECHNOLOGY /CSIT

B.TECH IV YEAR

(INFORMATION TECHNOLOGY /CSIT) CURRICULUM STRUCTURE

SEMESTER- VII													
Sl. No.	Subject	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
	Codes		L	T	P	CT	TA	Total	PS	TE	PE		
1	KHU701/KHU702	HSMC -1 / HSMC-2	3	0	0	30	20	50		100		150	3
2	KCS07X	Departmental Elective-IV	3	0	0	30	20	50		100		150	3
3	KCS07X	Departmental Elective-V	3	0	0	30	20	50		100		150	3
4	KOE07X	Open Elective-II	3	0	0	30	20	50		100		150	3
5	KIT751A	The Department may conduct one Lab of either of the two Electives (4 or 5) based on the elective chosen for the curriculum. The Department shall on its own prepare complete list of practical for the Lab and arrange for proper setup and conduct accordingly.	0	0	2				25		25	50	1
6	KIT752	Mini Project or Internship Assessment*	0	0	2				50			50	1
7	KIT753	Project 1	0	0	8				150			150	4
8		MOOCs (Essential for Hons. Degree)											
		Total	12	0	12							850	18

*The Mini Project or internship (4 - 6 weeks) conducted during summer break after VI semester and will be assessed during VII semester.

SEMESTER- VIII

Sl. No.	Subject	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
	Codes		L	T	P	CT	TA	Total	PS	TE	PE		
1	KHU801/KHU802	HSMC-2 [#] /HSMC-1 [#]	3	0	0	30	20	50		100		150	3
2	KOE08X	Open Elective-III	3	0	0	30	20	50		100		150	3
3	KOE08X	Open Elective-IV	3	0	0	30	20	50		100		150	3
4	KIT851	Project	0	0	18				100		300	400	9
5		MOOCs (Essential for Hons. Degree)											
		Total	9	0	18							850	18

Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-24	Semester: VIII
Course name: PME	Course Code: KHU 802	Faculty Name: Dr. Deepak Sethi

Tagging COs with BLs & KCs		Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
CO No.				
After completion of the course, the student will be able to				
CO1	Understand the theories of entrepreneurship and entrepreneurial development programmes.	Understand	Understand	Factual
CO2	Explain innovative business ideas and market opportunities for business development.	Understand	Understand	Conceptual
CO3	Understand the importance of project life cycle and different types of appraisal techniques.	Apply	Apply	Conceptual
CO4	Define different types of project financing requirements on the basis of cash flow statements.	Understand	Understand	Procedural
CO5	Describe social entrepreneurship opportunities and risk management techniques in social enterprises.	Understand	Understand	Conceptual

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
PME (KHU 802)														
Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO1	-	-	-	-	-	1	-	-	2	-	2	-	-	-
CO2	-	-	-	-	-	1	-	-	1	-	1	-	-	1
CO3	-	-	-	-	-	2	1	-	2	1	1	1	-	-
CO4	-	-	-	-	-	1	-	-	2	2	2	1	-	-
CO5	-	-	-	-	-	2	2	-	2	-	1	1	-	2
PO Target	-	-	-	-	-	1.4	1.5	-	1.8	1.5	1.4	1	-	1.5

Signature of Course Coordinator

Signature of Adm. 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.

Department for Computer Science and Information Technology

Program Name: B.Tech		Academic Session: 2023-2024	Semester: 8th
Course name: DSMM		Course Code: (KOE-094)	Faculty Name: Prince Gupta
Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Understand the role of Digital Marketing and its strategy. Discuss various social media platforms and the concept of blogging.	Understand	C
CO2	Compare the best practices in digital marketing field across various markets and gain knowledge of various digital marketing tool.	Understand	C
CO3	Predict different types of Digital marketing Strategies for an organization.	Understand	C
CO4	Analyze the privacy, security, content and ethicality issues associated with digital and social media platforms.	Analyze	C, P
CO5			

Please Note (Reference: OBE Guidelines ref. 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

Mapping of Course outcomes with Program outcomes CO-POs Matrix

Course Code	Course Name (Course Code)											
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12
CO1						2						1
CO2						1			1	2		1
CO3					2	1			2	2		1
CO4					2	2			2	2		1
CO5						1			1	2		1
PO Target												

Prince

(prince Gupta)

Signature of Course Coordinator

Signature of Addl. HoD

Signature of Addl. HoD

Signature of HoD

Signature of HoD

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

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- ❖ If there is no correlation, then put a “-” (dash).

Department for Computer Science and Information Technology

Program Name: B.Tech	Academic Session: 2023-24	Semester: VIII
Course name: Quality management	Course Code: KOE085	Faculty Name: Sonia Deshmukh
Tagging COs with BLs & KCs		
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)
After completion of the course, the student will be able to		
CO1	Understand the quality concept and its services.	Understand
CO2	Describe the methods of controlling the quality of a product.	Understand
CO3	Analyze the product quality using Statistical Quality Control techniques.	Analyze
CO4	Analyze the various defects, techniques for quality improvement.	Analyze
CO5	Describe the ISO 9000 Series, Taguchi method and JIT in improving a product quality.	Understand
		Knowledge Category (KC)
		Factual, Conceptual
		Conceptual
		Conceptual, Procedural
		Conceptual, Procedural
		Conceptual, Procedural

Please Note (Reference: OBE Guidelines web. Session 2023 – 24)

- ❖ 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

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
Quality Management (KOE085)														
Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO1	1	-	-	-	-	1	-	-	-	-	-	1	-	-
CO2	1	1	-	-	1	-	-	2	1	-	-	1	-	-
CO3	2	1	-	-	2	-	-	1	2	1	-	2	-	-
CO4	2	2	1	1	1	-	-	2	1	2	1	2	-	-
CO5	3	2	-	2	1	2	1	1	1	1	2	2	-	1
PO Target	1.8	1.5	1	1.5	1.25	1.5	1	1.5	1.25	1.33	1.5	1.6	-	1

Sonia

Signature of Course Coordinator

[Signature]

Signature of Addl. HoD

[Signature]

Signature of HoD

Please Note (Reference: OBE Guidelines wef. Session 2023 – 24)

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- ❖ If there is no correlation, then put a “-” (dash).

Department for Computer Science and Information Technology

Program Name: B.tech	Academic Session: 2023-24		Semester: VIII
Course name: Project	Course Code: KIT 851		Faculty Name: Ashima Arya
Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Demonstrate technical knowledge of their project.	Understand	Factual, Conceptual
CO2	Design and develop the project framework.	Create	Conceptual, Procedural
CO3	Analyse experimental results using various tools, techniques, and coding practices.	Analyze	Conceptual, Procedural
CO4	Test and validate the project.	Evaluation	Conceptual, Procedural
CO5	Communicate the findings with research community.	Analyze	Conceptual, Procedural
CO6	Construct a comprehensive project report that articulates the project's objectives, methodology, and findings clearly.	Create	Conceptual, Procedural

Please Note (Reference: OBE Guidelines wef. Session 2023 – 24)

- ❖ 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

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
Project (KIT 851)														
Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
CO1	3	2	1	3	1	1	1	2	3	2	1	3	-	-
CO2	2	2	3	3	3	2	1	1	3	2	1	3	2	1
CO3	1	3	3	3	2	-	1	1	3	2	-	3	2	1
CO4	1	3	1	3	1	-	-	1	3	2	-	3	1	1
CO5	1	3	1	2	1	1	-	3	3	2	-	2	1	-
CO6	1	1	1	2	1	-	-	3	3	2	1	2	-	-
PO Target	1.5	2.33	1.66	2.66	1.5	1.33	1	1.83	3	2	1	2.67	1.5	1


 Signature of Course Coordinator


 Signature of Addl. HoD


 Signature of HoD

Please Note (Reference: OBE Guidelines wef. Session 2023 – 24)

- ❖ 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).