

P.23 Mapping of course outcome with program outcomes

KKR & KSR INSTITUTE OF TECHNOLOGY & SCIENCES																
Department of Computer Science and Engineering																
OVER ALL COURSE ASSESSMENT (PO ATTAINMENT SUMMARY)																
ACADEMIC YEAR: 2020-21																
S.No	CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	C211	3.0	3.0	2.0	3.0									3.0	2.0	
2	C212	3	3	3	3	3	3		3		3		3	3	2	
3	C213	1.8	1.8	1.8	1.8	1.8	1.8		1.8	1.8	1.8	1.8	1.8	1.8	1.95	1.8
4	C214	1.8		1.8	1.8	1.8	1.8		1.8	1.8	1.8	1.8	1.9	1.8	2.0	1.8
5	C215	2.5		2.6	2.5	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.8	2.6
6	C216	2.6		2.6	2.6	2.5	2.6		2.6	2.6	2.6	2.6	2.5	2.4	2.3	2.5
7	C217	1.7		1.7	1.7	1.7	1.7		1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
8	C218	1.6		1.6	1.6	1.6	1.6		1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
9	C221	3.0	3.0	3.0										3.0	2.0	
10	C222	3.0	3.0	3.0	3.0									3.0	2.0	
11	C223	2.4	3.0	2.4	2.2	1.9	1.9		1.9	1.9	1.9	1.9	1.9	2.3	1.9	1.9
12	C224	3.0	3.0	3.0	3.0									3.0		
13	C225	3.0	3.0	3.0	3.0									3.0	2.0	
14	C226	3.0	3.0	3.0	3.0									3.0	3.0	
15	C227	3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
16	C228	1.0	1.0	1.0	1.0									1.0	1.0	
17	C311	2.0	2.0	2.0	0.0	2.0				2.0		2.0		2.0	2.0	
18	C312	3.0	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0	2.0	2.0
19	C313		3.0	3.0	3.0	3.0					3.0			3.0		2.0
20	C314	3.0	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	3.0	3.0	3.0
21	C315	3.0	3.0	3.0	2.0	3.0				3.0		3.0	3.0	3.0		
22	C316		1.0	1.0	1.0	1.0					1.0			1.0		1.0

23	C317	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0		1.0	1.0	1.0	1.0	1.0
24	C318	1.0	1.0	1.0	1.0	1.0	1.0			1.0		1.0	1.0	1.0	1.0	1.0
25	C321	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0			3.0		3.0
26	C322	3.0	2.0	2.0	2.0	3.0	2.0			3.0		3.0	3.0		2.0	1.0
27	C323	2.0	2.0	2.0	0.0	2.0				2.0		2.0		2.0	2.0	
28	C324	2.0	2.0	2.0	2.0	1.0			2.0	2.0				2.0		2.0
29	C325	3.0	3.0	3.0	3.0					3.0		3.0		3.0	3.0	3.0
30	C326	3.0	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0		3.0	3.0
31	C327	3.0	3.0	3.0	3.0	3.0			3.0	3.0				3.0		3.0
32	C328	2.0	2.0	2.0	2.0	2.0	2.0			2.0		2.0	2.0		2.0	2.0
33	C411	2.5	2.1	1.6		2.1								2.1	2.1	2.5
34	C412	3	3.0	2.1		2.6								2.6	3	3
35	C413	3.0	3.0	2.0	3.0	3.0	3.0				2.0					
36	C414	3.0	3.0	3.0	3.0				3.0	3.0		3.0		3.0	3.0	3.0
37	C415	2.4	2.4	2.4	2.4	2.4								2.7	2.8	
38	C416	2.8	2.7	2.2	2.8	2.5	3.0		3.0	3.0	2.0	3.0		2.6	2.7	2.8
39	C417	1.3	1.3	1.3		1.3								1.3	1.3	1.3
40	C418	1.3	1.3	1.3	1.3	1.3	1.3				1.3					
41	C421	2.50	2.50		2.45	2.45						2.50	2.50	2.43	2.50	3.00
42	C422		3.0			3.0	3.0				3.0	3.0		3.0	3.0	3.0
43	C423		2.0	3.0		3.0				2.0				2.0		
44	C424	2.5	2.5		2.5	2.5						2.5	2.5	2.4	2.5	3.0
45	C425		3.0	1.5	3.0				2.0	2.0	2.3		1.0	1.0		
46	C426	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	SUM	99.78	100.79	97.94	87.69	79.18	50.33	9.16	35.03	57.03	39.58	59.03	43.97	96.29	77.35	67.60
	AVG	2.43	2.46	2.28	2.25	2.26	2.29	2.29	2.34	2.28	2.20	2.36	2.20	2.35	2.21	2.25
	138	72.3%	73.0%	71.0%	63.5%	57.4%	36.5%	6.6%	25.4%	41.3%	28.7%	42.8%	31.9%	69.8%	56.0%	49.0%

KKR & KSR Institute of Technology and Sciences

Approved by AICTE, New Delhi and Permanent Affiliation from JNTUK, Kakinada, Accredited with “A” Grade by NAAC & NBA

Department of Computer Science and Engineering

Subject	Course	Course outcome	Level
MFCS	C211.1	Demonstrate skills in solving mathematical problems.	TL2: Understand
	C211.2	Comprehend mathematical principles and logic.	TL3: Application
	C211.3	Demonstrate knowledge of mathematical modelling and proficiency in using mathematical software	TL2: Understand
	C211.4	Manipulate and analyze data numerically and/or graphically using appropriate software	TL4: Analysis
	C211.5	Communicate effectively mathematical ideas/results verbally or in writing.	TL6: Creation
SE	C212.1	Students will be able to decompose the given project in various phases of a lifecycle.	L2: Understand
	C212.2	Students will be able to choose appropriate process model depending on the user requirements.	L6: Create
	C212.3	Students will be able perform various life cycle activities like Analysis, Design, Implementation, Testing and Maintenance.	Evaluate (Level 3)
	C212.4	Students will be able to know various processes used in all the phases of the product.	Analyze (Level 3)
	C212.5	Students can apply the knowledge, techniques, and skills in the development of a software product.	Apply (Level 3)
PYTHON	C213.1	Develop essential programming skills in computer programming concepts like data types, containers .	TL3: Application
	C213.2	Solve coding tasks related conditional execution, loops.	TL3: Application
	C213.3	Apply data structures and modules to solve the real time problems.	TL3: Application
	C213.4	Solve coding tasks related to the fundamental notions and techniques used in object oriented programming.	TL3: Application
	C213.5	Develop Graphical User Interface applications and Handling exceptions.	TL3: Application
DS	C214.1	Summarize the properties, interfaces, and behaviors of basic abstract data types	TL2: Understand
	C214.2	Discuss the computational efficiency of the principal algorithms for sorting & searching	TL3: Application
	C214.3	Use arrays, records, linked structures, stacks, queues, trees, and Graphs in writing programs	TL2: Understand
	C214.4	Demonstrate different methods for traversing trees	TL4: Analysis
C++	C215.1	Compare and Contrast the procedural and object oriented paradigms with concepts of streams, classes, functions, data and objects.	TL2: Understand
	C215.2	Develop dynamic memory management techniques using pointers, constructors, destructors, etc	TL3: Application
	C215.3	Apply the concept of function overloading, operator over loading, and reusability of classes.	TL2: Understand
	C215.4	Build virtual functions and polymorphism with the understanding of early and late binding.	TL4: Analysis

	C215.5	Identify the usage of exception handling, generic programming.	TL6: Creation
	C215.6	Implement data structures with the use of various STL components.	TL3: Application
CO	C216.1	Formulate various Binary codes Representation and procedures for Arithematic Operations.	Create
	C216.2	Develop different computing processors, instruction-codes, and Bus Routing procedures	Applying
	C216.3	Classify various architectures and functionality of central processing unit.	Analyze
	C216.4	Knowledge on various kinds of interrupts, Memory's operations.	Understanding
	C216.5	Evaluate Data transfers and Interprocessor communications.	Evaluate
P&S	C221.1	Understand the concepts of data science and find the values of various measures of central tendencies	Understand (TL2)
	C221.2	Interpret the association of characteristics and through correlation and regression tools.	Application (TL3)
	C221.3	Apply basic principles of probability and sample spaces, Bay's theorem.	Application (TL3)
	C221.4	Estimate the value of a population parameter, computation of point and its interval.	Evaluation (TL5)
	C221.5	Infer the statistical methods based on small and large sampling tests.	Understand (TL2)
JAVA	C222.1	Describe to realize the concept of Object Oriented Programming & Java Programming Constructs.	Understand (TL2)
	C222.2	Describe the basic concepts of Java such as operators, classes, objects, inheritance, Packages, Enumeration and various keywords	Application (TL3)
	C222.3	Apply the concept of function overloading, operator over loading, and reusability of classes.	Application (TL3)
	C222.4	Apply the concept of exception handling and Input/ Output operations	Evaluation (TL5)
	C222.5	Design the applications of Java & Java applet.	Understand (TL2)
	C222.6	Analyze & Design the concept of Event Handling and Abstract Window Toolkit	Analyze
OS	C223.1	Memorize the concepts of operating systems such as types, services and system calls.	Remember
	C223.2	Implement the process concepts on different processes by using scheduling algorithms.	Apply
	C223.3	Analyze different memory management techniques and gives optimal solutions.	Analyze
	C223.4	Identify the principals of concurrency and apply algorithms for deadlock problems.	Understand & Apply
	C223.5	Implement file system concepts and storage structures.	Apply
	C223.6	Memorize the concepts of System protection & security	Remember
DBMS	C224.1	Describe a Database Management System and Data Models	Understand (TL2)
	C224.2	Explain basic SQL conceps and Relational model.	Understand (TL2)
	C224.3	Design Entity Relationship model and develop SQL queries	Analyze
	C224.4	Analyze various Normal Forms.	Understanding

	C224.5	Discuss Transaction management and various storage structures and indexing techniques	Evaluate
FLAT	C225.1	Classify machines by their power to recognize languages	Analyze
	C225.2	Summarize language classes & grammars relationship among them with the help of Chomsky hierarchy	Remember
	C225.3	Employ finite state machines to solve problems in computing	Understanding
	C225.4	Illustrate deterministic and non-deterministic machines	Understanding
	C225.5	Quote the hierarchy of problems arising in the computer science	Remember
CD	C311.1	Acquire knowledge in different phases and passes of compiler, and specifying different types of tokens by lexical analyzer, and also able to use the compiler tools like LEX, YACC etc.,	L1:Remembering
	C311.2	Parser and its types ie top down and bottom up parsers	L2:Understanding
	C311.3	Construction of LL, SLR, CLR and LALR parse table	L3: Applying
	C311.4	Syntax directed translation, synthesized and inherited attributes.	TL4: Analysis
	C311.5	Techniques for code optimization	Evaluation (TL5)
UNIX	C312.1	Describe the architecture and features of UNIX Operating System and distinguish it from other Operating System	L1:Remembering
	C312.2	To gain an understanding of important aspects related to the SHELL and the process	L3 :Applying
	C312.3	Write Regular expressions for pattern matching and apply them to various filters for a specific task	L3: Applying
	C312.4	Understand the concepts of process, threads, and file structure.	L2:Understanding
OOAD	C313.1	Find solutions to the complex problems using object oriented approach	L1:Remembering
	C313.2	Identify classes and responsibilities in the problem domain	L2:Understanding
	C313.3	Represent classes, responsibilities and states using UML notation	L3: Applying
	C313.4	Analyze the complex problems through use cases analysis	TL4: Analysis
	C313.5	Evaluate the behavior of the system	Evaluation (TL5)
	C313.6	Build solutions to the complex problems using OOAD and UML notations	TL6: Creation
DBMS	C314.1	Illustrate the need of Data Bases in Real World and also explain Architecture Database Management System along with its Users.	L2 (Understanding)
	C314.2	Design an E-R Model and Relational Model for an Enterprise Data Apply various Relational Algebra Operators on Relations.	Level-6 (Creating)
	C314.3	Explain Various Structured Query Language (SQL) Commands and they can make use of those commands for various operations on Relations.	L3 (Applying)
	C314.4	Define the Purpose of Schema Refinement/Normalization and various Normal Forms in RDBMS and can	

		construct normalized Databases to solve Anomalies.	
	C314.5	Outline the Properties of a Transaction and summarize various types of Concurrency Methods used in RDBMS.	L2(Understanding)
	C314.6	Analyse and categorize various types of File Organizations methods and Indexing Techniques used in RDBMS.	L4 (Analyzing)
OS	C315.1	Memorize the concepts of operating systems such as types, services and system calls.	L1:Remembering
	C315.2	Implement the process concepts on different processes by using scheduling algorithms.	L3: Applying
	C315.3	Analyze different memory management techniques and gives optimal solutions.	T4: Analysis
	C315.4	Identify the principals of concurrency and apply algorithms for deadlock problems.	L3: Applying
	C315.5	Implement file system concepts and storage structures.	L3: Applying
	C315.6	Recall the basic concepts of Linux system and Android system platform.	L1:Remembering
CN	C321.1	Understand OSI and TCP/IP models	L2 Understanding
	C321.2	Differentiate the types of modulation and multiplexing techniques	L4 Analyzing
	C321.3	Illustrate various error control techniques and data link protocols	L4 Analyzing
	C321.4	Analyze MAC layer protocols and LAN technologies.	L4 Analyzing
	C321.5	Evaluate routing and congestion control algorithms.	Evaluation (TL5)
	C321.6	Design applications using internet protocols	TL6: Creation
DWM	C322.1	Understand stages in building a Data Warehouse	L2 Understanding
	C322.2	Understand the need and importance of pre-processing techniques	L2 Understanding
	C322.3	Understand the need and importance of Similarity and dissimilarity techniques	L2 Understanding
	C322.4	Analyze and evaluate performance of algorithms for Association Rules.	T4: Analysis
	C322.5	Analyze Classification and Clustering algorithms	T4: Analysis
DAA	C323.1	Analyze the asymptotic performance of Algorithms	T4: Analysis
	C323.2	Rigorous correctness proofs of algorithms	L2 Understanding
	C323.3	Demonstrate familiarity with major algorithms and Data Structures	L2 Understanding
	C323.4	Apply important algorithmic design paradigms and methods of analysis	L3: Applying
	C323.5	Synthesize efficient algorithms in common engineering design situations	Evaluation (TL5)
STM	C324.1	Define software testing and identify the basic testing procedures.	L2 Understanding
	C324.2	Illustrate transaction flow testing and data flow testing techniques.	L2 Understanding
	C324.3	Discuss about domain testing and apply reduction procedure to path testing.	L1:Remembering
	C324.4	Apply syntax testing for grammar and analyze decision tables using logic based testing techniques.	L3: Applying

	C324.5	Summarize State Graphs, Graph Matrices and their Applications	L1:Remembering
	C324.6	Select testing tools and generate test cases to resolve the problems in Real time environment.	T4: Analysis
IoT	C325.1	Describe the basics, definitions and vision of Internet of Things (IoT)	Understanding
	C325.2	Discuss the recent initiatives of International organizations and their Standards to design IoT/M2M architectural layers and domains	Understanding
	C325.3	Illustrate the usage of Communication and Message Transfer protocols between connected devices and the web Communication devices used in IoT/M2M.	Applying
	C325.4	Compare and discuss the internet connectivity protocols like HTTP,HTTPS,FTP and various other Application layer Protocols like TelNet	Analyzing
	C325.5	Evaluate the data acquiring and data-storage functions for IoT/M2Mdevices along with various types of Data Analysis methods.	Evaluating
	C325.6	Design and discuss the various Data storage techniques used to store data on Cloud platforms in IoT and also uses of participating sensing and Wireless Sensor Networks .	Creating
CNS	C411.1	Classify the different types of Security Attacks, Services and mechanisms.	Analysis
	C411.2	Describe the different types of symmetric algorithms using the basic mathematical structures	Understand
	C411.3	Describe the different types of asymmetric algorithms using the mathematical concepts.	Understand
	C411.4	Demonstrate the Data Integrity, Digital signatures algorithms and key management.	Application
	C411.5	Demonstrate the protocols PGP, S/MIME, SSL, TLS and their services.	Application
	C411.6	Analyze the various IP security and System security issues.	Analysis
SADP	C412.1	Understand the Software Architecture and its Structural Patterns	L2: Comprehension
	C412.2	Analyze the architecture and build the system	L3: Application
	C412.3	Design Creational and Structural Patterns	L3: Application
	C412.4	Understand about Behavioral design patterns	L2: Comprehension
	C412.5	Utilizing the Architectural Structures for software system	L3: Application
WT	C413.1	Understand HTML tags and CSS properties to design web pages	Understanding(TL2)
	C413.2	Describe the basic concepts of Java Scripts to design dynamic web pages	Evaluating (TL5)
	C413.3	Design to create structure of web page, to store the data in web document, and transport information through web.	Understanding(TL2)
	C413.4	Familiarize the concepts of PHP	Applying(TL3)
	C413.5	Familiarize the concepts of PERL and Ruby	Applying(TL3)

	C413.6	Write simple client-side scripts using AJAX	Creating(TL6)
MEFA	C414.1	Describe Managerial Economics& state different types of demand	Understand
	C414.2	Explain different types of Production functions &Cost Concepts	Remember
	C414.3	Recall the nature of Markets and different Pricing methods	Understand
	C414.4	State different forms of Business organizations and phases in BusinessCycles	Remember
	C414.5	Assess the Financial position of a company by using different techniques	Analysis
	C414.6	Illustrate different Investment proposals with help of Capital budgeting	Application
BDA	C415.1	Apply the data structures in java	Apply L3
	C415.2	Formulation of Hadoop Framework in different modes	Synthesis L5
	C415.3	Developing Map Reduce Programs	Apply L3
	C415.4	Explain input and output operations for Hadoop	Comprehension L2
	C415.5	Apply PIG tool for Hadoop	Apply L3
	C415.6	Apply structure to Hadoop with HIVE	Apply L3
CC	C416.1	State and Describe the central dimensions of the provocation of cloud computing, in terms of computing paradigms, technologies & Models.	Comprehension
	C416.2	List and differentiate the different levels of virtualization, its structures / tools, hardware virtualization, virtual clusters and resource management.	Knowledge
	C416.3	Use the cloud computing and service models, architecture designs and its security	Analysis
	C416.4	State and Explain the basics of cloud and grid platforms, parallel and distributed programming paradigms and programming support of GAP, AWS, MS Azure	Comprehension
	C416.5	List and Describe the cloud resource management and scheduling along with cloud storage systems	Knowledge
DS	C421.1	Describe Characterization of distributed systems and various models of Distributed systems.	Understand
	C421.2	Explain Inter process Communication in a distributed environment and standard protocols used in Distributed systems.	Understand
	C421.3	Define Distributed objects and Remote Invocation.	Knowledge
	C421.4	Apply the various Resource Management Systems.	Apply L3
	C421.5	Examine the various Distributed File systems.	Evaluating (TL5)
	C421.6	State Distributed Transactions and Replications.	Knowledge
MS	C422.1	Apply the concept of Management, Motivational theories, and designing different organizational structures in business organizations.	Application

	C422.2	Examine the quality of products using SQC and also maintain Inventory	Analysis
	C422.3	Analyze different functions of an organization and strategies of product life cycles and channels of distribution	Analysis
	C422.4	Designing project schedules with the help of network analysis	Synthesis
	C422.5	Differentiating Vision, Mission, and Goals of an organization and formulating strategies.	Comprehension
	C422.6	Applying different concepts of management at contemporary issues of an organization.	Application
ML	C423.1	Familiarity with a set of well-known supervised, unsupervised and semi-supervised	Understand
	C423.2	Able to know learning algorithms	Understand
	C423.3	The ability to implement some basic machine learning algorithms	Knowledge
	C423.4	Understanding of how machine learning algorithms are evaluated	Understand
ANN	C424.1	To identify the similarities and differences between biological and artificial neurons with their architectures along with different activation functions.	Analysis
	C424.2	To understand the impact of Mathematics in ANN and different learning mechanisms for error correction.	Comprehension
	C424.3	To understand Structure and learning of single layer Perceptron along with bayes' classifier.	Comprehension
	C424.4	To understand Structure of Multi-layer feed forward networks and concept of Back propagation algorithm along with Functional approximation.	Comprehension
	C424.5	To identify Pattern separability and interpolation using Radial Basis Function Networks.	Analysis
	C424.6	To introduce the concept of Support Vector machines and it's applicability in modeling machine learning algorithms.	Application