VR17 COURSE OUTCOMES

	DI	EPARTMEN	T OF COMPUT	TER SC	IATION TECHNOLOGY (A) IENCE AND ENGINEERING
			VRI7 - COU	RSE O	UTCOMES
Programme Code	Programme Name	Course Code	Course Name	СО	Course Outcome: After the completion of the course student will be able to
1	M.Tech-		Advanced Data Structures and	COI	Compare linear and non linear data structures.
58	Computer	2058171101		CO2	Implement searching, sorting and traversing methods.
	Science and		Algorithm	CO3	Implement priority queues using Binary heap.
	Engineering		Analysis	CO4	Analyze algorithms for Height balanced trees like AVL trees, red-black tr
	M.Tech-		Mathematical	CO1	Distinguish Propositional Logic from Predicate Logic. Analyzing.
58	Computer	2058171102	Foundations of	CO2	Practice problems related to fundamental theorems.
	Science and		Computer	CO3	Enumerate the basic algorithms in number theory.
	Engineering		Science	CO4	computer science p
	M.Tech-		Computer	_CO1	Understand the architecture and data representation in modern computer.
58	Computer	2058171103	Organization	CO2	Examine Combinational and Sequential Circuits.
	Science and		and	CO3	Compare Memory mapping techniques.
	Engineering M.Tech-		Architecture	CO4	Implement Computer Arithmetic Operations .
			Database	CO1	Identify the role of Database Management System for maintenance of
58	Computer Science and	2058171104	Management	CO2	Apply Relational Model to design and manipulate a Database.
	Engineering		Systems	CO3 CO4	Design a Database using Normalization techniques. Outline Database Concurrent transactions and Storage methods.
	M.Tech-		Advanced	CO1	architecture and distributed mutual exclusion.
	Computer		Operating	CO2	Analyze on deadlock detection algorithms and agreement protocols.
58	Science and	2058171105	Systems	CO3	protection and security in distributed operating systems.
ļ	Engineering		Systems	CO4	systems.
	M.Tech-		Data	COI	Implement data warehouse for heterogeneous data.
	Computer		Warehousing	CO2	Analyze real time datasets with basic summary statistics.
58	Science and	2058171106	And Data	CO3	Construct a decision tree to resolve the problem of model over fitting.
	Engineering		Mining	CO4	frequent itemset generation.
	M.Tech-			COI	Implement linear and non linear data structures using C language.
58	Computer		CSE Lab – 1	CO2	Develop C programs for searching and sorting techniques.
36	Science and	2058171121		CO3	Develop C Programs for generate min-cost spanning tree.
_	Engineering	<u> </u>		CO4	Develop C programs for process scheduling, Memory Management,
	M.Tech-			COI	Carryout literature survey, and choose a relevant topic reported in recent
	Computer	2058171132	Technical Seminar -1		IEFE/CSUACM/ conference publications / transactions in the domain of
58	Science and			CO2	Simulate and analyze the results reported in the chosen paper for seminar
	Engineering			CO3	Communicate effectively before the expert panel and develop technical
	0 0			CO4	Respond to the queries raised by the evaluation committee and audience.
	M.Tech-	2050151201		CO1	Explain the fundamentals of Encryption Algorithms.
58	Computer	2058171201	Cyber Security	CO2	Make use of Public Key Cryptographic Algorithms.
	Science and			CO3	Choose the various Authentication applications of security.
	Engineering			CO4	Demonstrate the functionalities of Firewalls.
	M.Tech- Computer	2058171202	Computer	CO1	Interpret data communication models using OSI/ISO and
58		2030171202	Networks	CO2	Outline Physical Layer communication.
,	Science and			CO3	Analyze protocols implemented in data link layer for error and flow control
	Engineering M.Tech-			<u>CO4</u> CO1	Analyze the features and operations of different MAC mechanisms.
	Computer	2058171203	Big Data		Implement data structures required for developing map reduce programs. Interpret Hadoop's architecture and core components of Hadoop Distribu
58	Science and	2050171205	Analytics	CO2	paradigm.
	Engineering		Analytics	CO4	Analyze interfaces for Hadoop I/O.
	M.Tech-			COI	Make use of basic UNIX commands.
	Computer	2058171204	Advanced Unix	CO2	Analyze file system architecture to organize the file system.
ro	Compace		Programming	CO3	
58	Science and				I Analyze shell command line structure
58	Science and				Analyze shell command line structure . Illustrate the usage of filters in AWK language
58	Science and Engineering M.Tech-	<u> </u>		CO4	Illustrate the usage of filters in AWK language.
	Engineering M.Tech-	2058171205		CO4 CO1	Illustrate the usage of filters in AWK language. Analyze software development process models and their suitability to
58	Engineering M.Tech- Computer	2058171205	Software	CO1 CO2	Illustrate the usage of filters in AWK language. Analyze software development process models and their suitability to Develop SRS document for software design.
	Engineering M.Tech- Computer Science and	2058171205		CO4 CO1 CO2 CO3	Illustrate the usage of filters in AWK language. Analyze software development process models and their suitability to Develop SRS document for software design. Employ software architectural styles to design user interface.
	Engineering M.Tech- Computer	2058171205	Software	CO4 CO1 CO2 CO3 CO4	Illustrate the usage of filters in AWK language. Analyze software development process models and their suitability to Develop SRS document for software design. Employ software architectural styles to design user interface. Compare software testing approaches and aspects.
58	Engineering M.Tech- Computer Science and Engineering	2058171205	Software	CO4 CO1 CO2 CO3	Illustrate the usage of filters in AWK language. Analyze software development process models and their suitability to Develop SRS document for software design. Employ software architectural styles to design user interface. Compare software testing approaches and aspects. Apply Artificial Intelligence in Game Playing.
	Engineering M.Tech- Computer Science and Engineering M.Tech-		Software Engineering	CO4 CO1 CO2 CO3 CO4 CO1	Illustrate the usage of filters in AWK language. Analyze software development process models and their suitability to Develop SRS document for software design. Employ software architectural styles to design user interface. Compare software testing approaches and aspects.
58	Engineering M.Tech- Computer Science and Engineering M.Tech- Computer		Software Engineering	CO4 CO1 CO2 CO3 CO4	Illustrate the usage of filters in AWK language. Analyze software development process models and their suitability to Develop SRS document for software design. Employ software architectural styles to design user interface. Compare software testing approaches and aspects. Apply Artificial Intelligence in Game Playing. Identify problem solving and reduction strategies in Al. Outline logic concepts in Al.
58	M.Tech- Computer Science and Engineering M.Tech- Computer Science and		Software Engineering	CO4 CO1 CO2 CO3 CO4 CO1 CO2	Illustrate the usage of filters in AWK language. Analyze software development process models and their suitability to Develop SRS document for software design. Employ software architectural styles to design user interface. Compare software testing approaches and aspects. Apply Artificial Intelligence in Game Playing. Identify problem solving and reduction strategies in AI.
58	Engineering M.Tech- Computer Science and Engineering M.Tech- Computer Science and Engineering	2058171206	Software Engineering Artificial Intelligence	CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3	Illustrate the usage of filters in AWK language. Analyze software development process models and their suitability to Develop SRS document for software design. Employ software architectural styles to design user interface. Compare software testing approaches and aspects. Apply Artificial Intelligence in Game Playing. Identify problem solving and reduction strategies in AI. Outline logic concepts in AI. Analyze the current knowledge representation techniques in AI.
58	Engineering M.Tech- Computer Science and Engineering M.Tech- Computer Science and Engineering M.Tech-		Software Engineering	CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1	Illustrate the usage of filters in AWK language. Analyze software development process models and their suitability to Develop SRS document for software design. Employ software architectural styles to design user interface. Compare software testing approaches and aspects. Apply Artificial Intelligence in Game Playing. Identify problem solving and reduction strategies in Al. Outline logic concepts in Al. Analyze the current knowledge representation techniques in Al. Outline lexical analyzer. Construct top down parsers.
58	Engineering M.Tech- Computer Science and Engineering M.Tech- Computer Science and Engineering M.Tech- Computer	2058171206	Software Engineering Artificial Intelligence	CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2	Illustrate the usage of filters in AWK language. Analyze software development process models and their suitability to Develop SRS document for software design. Employ software architectural styles to design user interface. Compare software testing approaches and aspects. Apply Artificial Intelligence in Game Playing. Identify problem solving and reduction strategies in AI. Outline logic concepts in AI. Analyze the current knowledge representation techniques in AI. Outline lexical analyzer. Construct top down parsers. Construct SLR, CLR, LALR bottom up parsers.
58	Engineering M.Tech- Computer Science and Engineering M.Tech- Computer Science and Engineering M.Tech- Computer Science and	2058171206	Software Engineering Artificial Intelligence	CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1	Illustrate the usage of filters in AWK language. Analyze software development process models and their suitability to Develop SRS document for software design. Employ software architectural styles to design user interface. Compare software testing approaches and aspects. Apply Artificial Intelligence in Game Playing. Identify problem solving and reduction strategies in AI. Outline logic concepts in AI. Analyze the current knowledge representation techniques in AI. Outline lexical analyzer. Construct top down parsers. Construct SLR, CLR, LALR bottom up parsers. Develop intermediate code by analyzing semantic analysis phase.
58 58 58	Engineering M.Tech- Computer Science and Engineering M.Tech- Computer Science and Engineering M.Tech- Computer Science and Engineering	2058171206 2058171207	Software Engineering Artificial Intelligence	CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3	Illustrate the usage of filters in AWK language. Analyze software development process models and their suitability to Develop SRS document for software design. Employ software architectural styles to design user interface. Compare software testing approaches and aspects. Apply Artificial Intelligence in Game Playing. Identify problem solving and reduction strategies in AI. Outline logic concepts in AI. Analyze the current knowledge representation techniques in AI. Outline lexical analyzer. Construct top down parsers. Construct SLR, CLR, LALR bottom up parsers. Develop intermediate code by analyzing semantic analysis phase. Recognize the characteristics of machine learning that make it useful to no
58	Engineering M.Tech- Computer Science and Engineering M.Tech- Computer Science and Engineering M.Tech- Computer Science and Engineering M.Tech- Science and Engineering M.Tech-	2058171206	Software Engineering Artificial Intelligence Compiler Design	CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1	Illustrate the usage of filters in AWK language. Analyze software development process models and their suitability to Develop SRS document for software design. Employ software architectural styles to design user interface. Compare software testing approaches and aspects. Apply Artificial Intelligence in Game Playing. Identify problem solving and reduction strategies in AI. Outline logic concepts in AI. Analyze the current knowledge representation techniques in AI. Outline lexical analyzer. Construct top down parsers. Construct SLR, CLR, LALR bottom up parsers. Develop intermediate code by analyzing semantic analysis phase. Recognize the characteristics of machine learning that make it useful to not Characterize machine learning algorithms as supervised, semi-supervised.
58 58 58	Engineering M.Tech- Computer Science and Engineering M.Tech- Computer	2058171206 2058171207	Software Engineering Artificial Intelligence Compiler Design	CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2	Illustrate the usage of filters in AWK language. Analyze software development process models and their suitability to Develop SRS document for software design. Employ software architectural styles to design user interface. Compare software testing approaches and aspects. Apply Artificial Intelligence in Game Playing. Identify problem solving and reduction strategies in Al. Outline logic concepts in Al. Analyze the current knowledge representation techniques in Al. Outline lexical analyzer. Construct top down parsers. Construct SLR, CLR, LALR bottom up parsers.

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1	Science and		Processing	CO3	Apply Image Processing operations to color images.
	Engineering			CO4	Identify suitable Image segmentation algorithm and compare data
	M.Tech-			CO1	Apply various scheduling algorithms for parallel Processors.
58	Computer	2058171210	Parallel	CO2	Discuss Parallel algorithms on SIMD and MIMD machines.
50	Science and	2030171210	Algorithms	CO3	Apply various algorithms for Dictionary operations.
	Engineering			CO4	Apply various parallel algorithms for Graph Searching.
	M.Tech-		Cloud	CO1	Differentiate among various cloud offerings, cloud environments, distributed
58	Computer	1099192100	Computing	_CO2	Analyze various cloud platforms and cloud applications.
30	Science and	1033137100	Computing	CO3	Survey the policies and mechanisms for resource management, performance,
	Engineering		l	CO4	Choose among different storage technologies for cloud like DFS, GFS,
	M.Tech-		Mobile	CO1	Illustrate GSM Architecture in wireless networks.
-0	Computer	2050151211		CO2	Select efficient Medium access control mechanism.
58	Science and	2058171211	Computing	CO3	Outline the functionality of a mobile agent in network layer.
	Engineering			CO4	Explain transport layer protocols of mobile node and its database issues.
	M.Tech-			CO1	Implement connection oriented and connectionless protocols.
	Computer			CO2	Implement the SMTP, FTP & HTTP.
58	Science and	2058171212	CSE Lab – 2	CO3	Implement Socket System call.
	Engineering		i	CO4	Implement inter process communication using shared memory
					Carryout literature survey, and choose a relevant topic reported in recent
	M.Tech- Computer Science and Engineering	2058171232	Technical - Seminar -2 -	CO1	IEEE/CSI/ACM/ conference publications / transactions in the domain of
58				CO2	Simulate and analyze the results reported in the chosen paper for seminar
				CO3	Communicate effectively before the expert panel and develop technical
ļ				CO4	Respond to the queries raised by the evaluation committee and audience.
	M.Tech-			CO1	Demonstrate knowledge in the program domain.
			Comprehensive	CO2	Present views cogently and precisely.
58	Computer	2058171235	Exam	CO3	Exhibit professional etiquette suitable for career progression.
ļ	Science and Engineering			CO4	Apply computer science theory and software development fundamentals to produce
	M.Tech-			COI	apply the software engineering principles in planning, formulating an innovative design/ approach and computing the requirements appropriate to chosen topic within the context of legal, societal and environment constraint.
58	Computer Science and Engineering	2058172138	Project Work (Stage- I)	CO2	Ability to perform individually accepting responsibility, taking initiative, and providing leadership, necessary to ensure project success.
	Engineering		Į.	CO3	Ability to use formal and informal communications with guide, make
				CO4	Develop/implement the solutions with appropriate techniques, resources and contemporary tools for social relayent issues/problems.
	M.Tech- Computer		Project Work	COI	apply the software engineering principles in planning, formulating an innovative design/ approach and computing the requirements appropriate to chosen topic within the context of legal, societal and environment constraint.
58	Science and Engineering	2058172238	(Stage- II)	CO2	Ability to perform individually accepting responsibility, taking initiative, and providing leadership, necessary to ensure project success.
				CO3	Ability to use formal and informal communications with guide, make presentations and prepare technical document.



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		VIGNA			FORMATION TECHNOLOGY
					IENT OF IT
			VR17 -	COURS	SE OUTCOMES
Programme Code	Programme Name	Course Code	Course Name	СО	Course Outcome: After the completion of the course student will be able to
	[CO1	complexity.
				CO2	Elaborate and implement the proper usage of advanced abstract data type
40	M.Tech- Information	2040171101	Advanced Data		(ADT) and data structures and their implementations.
40	Technology	2040171101	Structures	CO3	Interpret various algorithm design techniques (brute-force, divide and conquer, greedy,etc.
				CO4	Execute learned algorithm design techniques and data structures to solve real world problems.
				CO1	Reproduce the proofs of all fundamental statements on graphs.
40	M.Tech- Information	2040171102	Advanced Graph	COZ	Evaluate and apply graph interpretations(distance, metrics) to solve new graph problems.
40	Technology	20,01,110	Theory	CO3	Apply graph theory knowledge in computer science applications.
		'		CO4	Design and implement the graph colouring strategies and computing hard
	-			CO1	graph problems.
	M.Tech-	ļ		CO2	decomposition techniques. Use different performance metrics for analysis of parallel algorithms.
40	Information	2040171103	Parallel Algorithms	CO3	multithreading.
	Technology			CO4	Execute implicit and explicit parallel platform.
•-•					Identify stages in building a Data Warehouse and challenges in Data
				CO1	mining.
	M.Tech-		Data Mining And		Access raw input data and apply data pre-processing techniques,
40	Information	2040171104	Data Mining And Knowledge	CO2	generalization techniques and data characterization techniques to provide
ערי	Technology	2040171104	Discovery		suitable input for a range of data mining algorithms.
	recumology			CO3	Analyze data mining techniques like classification and Association rules
		İ			that can be applied to data objects and to find the interesting patterns.
				CO4	Solve real world problems by using the various Clustering methods. Develop and evaluate distributed application architectures according to
	1			CO1	functional requirements.
	M.Tech- Information Technology	2040171105	Advanced Computer Networks	CO2	Design IPv6 based computer networks.
40					Select appropriate quality of service mechanisms for a give computer
				CO3	network.
				CO4	Plan the interworking of distributed application basing on Semantic Web
	-			<u> </u>	technology.
	M.Tech-			CO1	Analyze a web page and identify its elements and attributes to create web
40	Information	2040171106	Web Technologies	CO2 CO3	Compile the basic concepts of Java Scripts to design dynamic web pages. Analyze a given problem and apply requisite appropriate tools for
	Technology	ļ		CO4	Develop fully functional web application through client and server
	+	1		CO1	environment.
	M.Tech-			CO2	communication.
40		2040171121	IT Lab – I	CO3	Visualize datasets using data mining techniques like classification and
	Technology	1		CO4	real world problems.
				CO1	Carryout literature survey, and choose a relevant topic reported in recent IEEE/CSI/ACM/ conference publications / transactions in the domain of
4.0	M.Tech-	1	Technical Seminar -		computer science and engineering.
40	Information	1	1	CO2	Simulate and analyze the results reported in the chosen paper for seminar
	Technology	1		CO3	Communicate effectively before the expert panel and develop technical
				CO4	Respond to the queries raised by the evaluation committee and audience.
				CO1	Execute UNIX commands for file handling and process control.
	M.Tech-		Advanced Unix	COZ	Interpret Regular expressions for pattern matching and apply them to various filters for a specific task.
40	Information Technology	1	Programming	CO3	Analyze a given problem and apply requisite facets of SHELL programming in order to devise a SHELL script to solve the problem.
				CO4	Review the architecture and features of UNIX Operating System and
	+		+	CO1	distinguish it from other Operating System. Design, develop, test and evaluate secure software.
					Analyze and resolve security issues in networks and computer systems to
	M.Tech-			CO2	secure an IT infrastructure.
40	Information	1	Cyber Security	503	Evaluate and communicate the human role in security systems with an
	Technology	1		CO3	emphasis on ethics, social engineering vulnerabilities and training.
				CO4	develop policies and procedures to manage enterprise security risks.

	— т			CO1	Analyze Hadoop Architecture.
	M.Tech-		 	CO2	Acquire knowledge on Map Reduce Framework and implement various
40		2040171203	Big Data Analytics	CO3	Develop applications using java language and implement programs by
	Technology		<u> </u>	CO4	Implement Big data activities using PIG and HIVE.
				CO1	apply the knowledge of cloud technology to demonstrate the working
	M.Tech-			CO2	analyse cloud services extended by various cloud providers to build a
40	Information	2040171204	Cloud Computing	CO3	Identify emerging cloud programming paradigms and its software
	Technology		<u> </u>	CO4	Design and develop the backup strategies for cloud data based on features.
					Minimise and deploy the challenges in designing MAC, routing and
				CO1	transport protocols for wireless ad-hoc/sensor networks.
40	M.Tech-	2040474200	Adhoc & Sensor	CO2	Communication and the continuous and Plants and the state of the state
40	Information Technology	2040171205	Networks -	CO3	Comprehend the various sensor network Platforms, tools and applications.
	Lechnology		-	- (03	resolve the unique issues in ad-hoc/sensor networks. Implement designing routing and transport protocols for wireless Ad-
	1 1			CO4	hoc/sensor networks.
	-			CO1	Interpret the basics of Semantic Web and Social Network.
	M.Tech-	-	Semantic Web	CO2	Design and apply knowledge representation for developing semantic web.
40	Information	2040171206	services	CO3	Analyze the web Intelligence.
	Technology			CO4	Evaluate Web- based social network and Ontology.
· ·	1			CO1	Able to understand syntax and semantics of programming languages.
	M.Tech-		Principles Of	CO2	Able to understand variables, data types, and basic statements.
40	Information	2040171207	Programming	CO3	oriented concepts.
	Technology		Languages	CO4	Able to understand and adopt new programming languages.
	+			CO1	Analyze and formulate the Architecture, protocols and applications of IoT
	M.Tech-			CO2	Analyse and design the communication protocols and standards used i
40	Information	2040171208	Internet Of Things	CO3	Analyse and design the simple IoT applications to monitor or control Io
	Technology		i 1	CO4	Implement the real time IoT applications.
					Recognize the characteristics of machine learning and differential
	1 1			CO1	machine learning algorithms into supervised, unsupervised and sem
	M.Tech-				supervised.
40	Information	2040171209	Machine Learning	ÇOZ	Solve classification problems using concept learning and decision trees.
	Technology			CO3	Interpret of Dimensionality Reduction and vector machine algorithms.
] -			CO4	Identify the concept behind neural networks for learning non-linea
				CO4	functions.
	M.Tech-			CO1	iidentify the similarity of query and document.
40	Information	2040171210	Information	CO2	errors.
40	Technology	2040171210	Retrieval System	CO3	and k-means algorithm.
	reciniology			CO4	Design the method to build inverted index.
	M.Tech-			CO1	Execute various filters and arithmetic operations in image processing.
40	Information	2040171211	Image Processing &	CO2	techniques.
40	Technology	20401/1211	Pattern Recognition	CO3	theories.
	reciniology			CO4	ordering in real world domain.
	M.Tech-			CO1	Figure out practical solutions to the problems for various applications.
40	Information	2040171212	Software Testing	CO2	Define, formulate and analyze test cases for given problem domain.
			Methodologies	CO3	The first of the contract of t
,_			wethodologies		Manage testplans and testmodels for project from beginning to end.
	Technology		Methodologies	CO4	Finding out implementation of different strategies to replace errors.
	Technology		Methodologies	CO4 CO1	Finding out implementation of different strategies to replace errors. shell scripting.
	Technology M.Tech-			CO4 CO1 CO2	Finding out implementation of different strategies to replace errors. shell scripting. communication.
40	M.Tech- Information		IT LAB - 2	CO4 CO1	Finding out implementation of different strategies to replace errors. shell scripting. communication. Evaluate different encryption algorithms on number theory.
	Technology M.Tech-			CO4 CO1 CO2	Finding out implementation of different strategies to replace errors. shell scripting. communication. Evaluate different encryption algorithms on number theory. real world problems.
	M.Tech- Information			CO4 CO1 CO2 CO3 CO4	Finding out implementation of different strategies to replace errors. shell scripting. communication. Evaluate different encryption algorithms on number theory. real world problems. Carryout literature survey, and choose a relevant topic reported in recent
	M.Tech- Information Technology			CO4 CO1 CO2 CO3	Finding out implementation of different strategies to replace errors. shell scripting. communication. Evaluate different encryption algorithms on number theory. real world problems. Carryout literature survey, and choose a relevant topic reported in recent IEEE/CSI/ACM/ conference publications / transactions in the domain of
40	M.Tech- Information Technology	2040171221		CO4 CO1 CO2 CO3 CO4	Finding out implementation of different strategies to replace errors, shell scripting. communication. Evaluate different encryption algorithms on number theory. real world problems. Carryout literature survey, and choose a relevant topic reported in recent IEEE/CSI/ACM/ conference publications / transactions in the domain of computer science and engineering.
	M.Tech- Information Technology M.Tech- Information	2040171221	IT LAB - 2	CO4 CO1 CO2 CO3 CO4 CO1	Finding out implementation of different strategies to replace errors. shell scripting. communication. Evaluate different encryption algorithms on number theory. real world problems. Carryout literature survey, and choose a relevant topic reported in recent IEEE/CSI/ACM/ conference publications / transactions in the domain of computer science and engineering. Simulate and analyze the results reported in the chosen paper for semina
40	M.Tech- Information Technology	2040171221	IT LAB — 2 Technical Seminar -	CO4 CO1 CO2 CO3 CO4 CO1	Finding out implementation of different strategies to replace errors. shell scripting. communication. Evaluate different encryption algorithms on number theory. real world problems. Carryout literature survey, and choose a relevant topic reported in recent IEEE/CSI/ACM/ conference publications / transactions in the domain of computer science and engineering. Simulate and analyze the results reported in the chosen paper for semina Communicate effectively before the expert panel and develop technical
40	M.Tech- Information Technology M.Tech- Information	2040171221	IT LAB — 2 Technical Seminar -	CO4 CO1 CO2 CO3 CO4 CO1	Finding out implementation of different strategies to replace errors. shell scripting. communication. Evaluate different encryption algorithms on number theory. real world problems. Carryout literature survey, and choose a relevant topic reported in recent IEEE/CSI/ACM/ conference publications / transactions in the domain of computer science and engineering. Simulate and analyze the results reported in the chosen paper for semina Communicate effectively before the expert panel and develop technical Respond to the queries raised by the evaluation committee and audience
40	M.Tech- Information Technology M.Tech- Information	2040171221	IT LAB — 2 Technical Seminar -	CO4 CO1 CO2 CO3 CO4 CO1	Finding out implementation of different strategies to replace errors. shell scripting. communication. Evaluate different encryption algorithms on number theory. real world problems. Carryout literature survey, and choose a relevant topic reported in recent IEEE/CSI/ACM/ conference publications / transactions in the domain of computer science and engineering. Simulate and analyze the results reported in the chosen paper for semina Communicate effectively before the expert panel and develop technical Respond to the queries raised by the evaluation committee and audience Analyze a complex computing problem and to apply principles of
40	M.Tech- Information Technology M.Tech- Information	2040171221	IT LAB — 2 Technical Seminar -	CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4	Finding out implementation of different strategies to replace errors. shell scripting. communication. Evaluate different encryption algorithms on number theory. real world problems. Carryout literature survey, and choose a relevant topic reported in recent IEEE/CSI/ACM/ conference publications / transactions in the domain of computer science and engineering. Simulate and analyze the results reported in the chosen paper for semina Communicate effectively before the expert panel and develop technical Respond to the queries raised by the evaluation committee and audience Analyze a complex computing problem and to apply principles of computing and relevant disciplines to identify solutions.
40	M.Tech- Information Technology M.Tech- Information Technology	2040171221	IT LAB — 2 Technical Seminar -	CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4	Finding out implementation of different strategies to replace errors. shell scripting. communication. Evaluate different encryption algorithms on number theory. real world problems. Carryout literature survey, and choose a relevant topic reported in recent IEEE/CSI/ACM/ conference publications / transactions in the domain of computer science and engineering. Simulate and analyze the results reported in the chosen paper for semina Communicate effectively before the expert panel and develop technical Respond to the queries raised by the evaluation committee and audience Analyze a complex computing problem and to apply principles of computing and relevant disciplines to identify solutions. Design, implement, and evaluate a computing-based solution to meet a
40	M.Tech- Information Technology M.Tech- Information Technology M.Tech-	2040171221	Technical Seminar - 2	CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4	Finding out implementation of different strategies to replace errors. shell scripting. communication. Evaluate different encryption algorithms on number theory. real world problems. Carryout literature survey, and choose a relevant topic reported in recent IEEE/CSI/ACM/ conference publications / transactions in the domain of computer science and engineering. Simulate and analyze the results reported in the chosen paper for semina Communicate effectively before the expert panel and develop technical Respond to the queries raised by the evaluation committee and audience Analyze a complex computing problem and to apply principles of computing and relevant disciplines to identify solutions. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's
40	M.Tech- Information Technology M.Tech- Information Technology	2040171221 2040171232	Technical Seminar - 2	CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4	Finding out implementation of different strategies to replace errors. shell scripting. communication. Evaluate different encryption algorithms on number theory. real world problems. Carryout literature survey, and choose a relevant topic reported in recent IEEE/CSI/ACM/ conference publications / transactions in the domain of computer science and engineering. Simulate and analyze the results reported in the chosen paper for seminal Communicate effectively before the expert panel and develop technical Respond to the queries raised by the evaluation committee and audience. Analyze a complex computing problem and to apply principles of computing and relevant disciplines to identify solutions. Design, implement, and evaluate a computing-based solution to meet a

			PARTMENT OF M	ECHA	MATION TECHNOLOGY (A) NICAL ENGINEERING
			VR17 - CO	URSE (DUTCOMES
Programme Code	Programme Name	Course Code	Course Name	СО	Course Outcome: After the completion of the course student will be able to
	M.Tech-		Computational		Understand numerical methods for engineering problems
15	Machine	2015171101	Methods In		Apply numerical methods to solve the boundary value problems
	Design		Engineering		 Apply numerical solution to discrete Fourier transform (DFT) and
	8			CO4	Apply numerical solutions of partial differential equations.
	M.Tech-		Advanced -		• Formulate the stress strain tensor
15	Machine	2015171102	Mechanics of		Design the failure theories Establish the idea of baseline o
1.0	Design	l l	Solids		Establish the idea of bending of beams Apply the concept of contact stresses
					Understand the various elements in of mechanism for plane
	M.Tech-		Advanced	CO2	Analyze the synthesis of mechanism for a plane motion with
15	Machine	: 2015171103	Mechanisms	CO3	Analyze the motion in plane motion in mechanism graphically
	Design				Evaluate the maipulator kinematics with D-H notation
					 Understand the importance of vibrations in mechanical design of
				CO1	machine parts that operate in vibratory conditions and know
	M.Tech-		Mechanical		Determine vibratory responses of SDOF systems to different
15	Machine	2015171104	Vibrations	CO2	excitations like harmonic, periodic and non-periodic excitation
	Design		4 intations		 Obtain eigen values and eigen vectors of MDOF systems using
	l				theoretical and numerical methods
	1			CO4	 Analyze for frequency and amplitudes of continuous systems lik
					Understand the concepts such as elasticity in materials, plastic
				CO1	deformation, and advanced concepts like solid solution and
	M.Tech-		Design with		Select the material based on cost, service, and mechanical
15	Machine	: 2015171105	Advanced	CO2	properties using material property charts
	Design		Materials	603	Analyze material characteristics of various modern metallic
				CO3	materials such as dual phase steels, intermetallics, and alloys
				CO4	Evaluate the porcessing and properties of polymer based
				CO1	compsoite materials, smart materials, shape memory alloys • Understand the safety and conseptual design of Automobiles
	[-	COI	Evaluate design of structural elements and load analysis for
	M.Tech-		DESIGN OF	CO2	different vehicles based on comering loads
15	Machine Design	2015171106	AUTOMOBILE SYSTEMS		Understand Vehicle ergonomics, Suspension system for ride
**				CO3	comfort and methods of mounting suspension systems
					Analyze Safety aspects of automobiles and energy absorbing
	1	k l		CO4	systems through testing(lab, field testing).
	1000			CO1	Dustumer survey and identify the custmer requirment
1.5	M.Tech-	2015151105	PRODUCT	CO2	Generate the concept of new product and different fabrication
15	Machine	2015171107	DESIGN	CO3	Make the solid model in virtual platform and evaluate the produ
	Design			CO4	• Selecting the correct process of fabrication to optimze the cost a
	M.Tech-	1	1	CO1	Use various mathematical equation to represent curves.
15	Machine	: 2015171108	GEOMETRIC	CO2	Apply the cubic splines in modeling of a product
1.5	Design	. 2013171100	MODELING	CO3	Select appropriate synthetic curves in modeling process
	Design			CO4	• Implement the surface modeling for design of various consumer
	M.Tech-			CO1	• Describe the role of analysis and synthesis in the design process
15	Machine	2015171109	DESIGN	CO2	Understand Tolerance from process and function
	Design		SYNTHESIS	CO3	Describe the design methods for forging, assembly and
	-			CO4	Develop problems formulation for design optimization
	M.Tech-		MACHINE	CO1	Interpret the damped and undamped natural frequency and
15	Machine	2015171121	DYNAMICS	CO2	Calculate the balancing of masses in static and dynamic cases Estimate the manifest of masses in static and dynamic cases
	Design		LAB	CO3	• Estimate the magnitude of gyroscopic couple, angular velocity
	 			UU4	Analyse the Direct and Inverse kinematic of a robot Correct literature survey, and choose a relevant tonic reported.
		1	TECHNICAL		: Carryout literature survey, and choose a relevant topic reported
	M.Tech-		TECHNICAL SEMINAR-I	CO1	recent IEEE/Springer/SAGE/ conference publications / transaction the domain of mechanical engineering
15	Machine	2015171132	SEMILIAK-I	CO2	
	Design			CO ₂	
			ļ	CO4	: Respond to the queries raised by the evaluation committee and
	-	 		COL	Understand the concept of optimization techniques and
	M.Tech-		OPTIMIZATION	CO2	Evaluate the basics of different algorithms
15	Machine	: 2015171201	AND	CO3	Solve multi objective optimisation techniques
	Design		RELIABILITY	CO4	Analyze different alogatithms and optimization technques
		 		CO1	Understand the various stresses in 2D and 3D objects
	M.Tech-		EXPERIMENTA	CO2	Analyze the working strain recording systems
15	Machine	2015171202	L STRESS	CO3	Analyze the working statit recording systems Analyze the photo elasticity & its measurement
	Design		ANALYSIS		

				1 1 1 1 1 1	Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
				CO1	Apply the software engineering principles in planning, formulating an innovative design/ approach and computing the requirements appropriate to chosen topic within the context of legal, societal and environment constraint.
40	M.Tech- Information Technology	ation 2040172138	Project Work(Stage- I)	CO2	Perform individually as well as in a team, accepting responsibility, taking initiative, and providing leadership, necessary to ensure project success.
				CO3	Use formal and informal communications with team members and guide, make presentations and prepare technical document.
				CO4	Develop/implement the solutions with appropriate techniques, resources and contemporary tools for social relavent issues/problems.



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		· · · · · · · · · · · · · · · · · · ·			
					 Understand the concepts of potential energy, Raleigh Ritz method
				COL	and weighted residual methods
	M.Tech-		FINITE		 Identify the suitable FEA elements such as bars, truss, beams,
15	Machine	2015171203	ELEMENT	CO2	constant strain triangle and isoparametric elements to create Finite
	Design		METHOD		Apply suitable boundary conditions to the finite element model
				CO3	and solve the engineering problems
			Growing	CO4	Solve problems involving dynamics and heat transfer.
	M.Tech-		SIGNAL	COI	Understand basic concepts of Fourier analysis, Bandwidth.
15	Machine	2015171204	ANALYSIS AND	CO2	Analysis of stationary signals.
	Design		CONDITION	CO3	Analysis of continuous non-stationary signals.
			MONITORING	CO4	Apply condition monitoring in real systems
	ļ			CO1	Understand the basic concepts of Acoustics and Noise control
	3.6 Tht.			000	Identify the different sources of noise from various machine
15	M.Tech- Machine	3015151305	Acoustics and	CO2	componets bearing, gears motors, fans propellers, generator sets,
15	Design	2015171205	Noise Control	COZ	Apply the knowledge of noise ratings, standards and levels in the
	Design			CO3	design of Engine and muffler design.
				004	Analyse the vehicular noise and environmental noise and control
	<u> </u>			CO4	the noise using diffrent noise control techniques
	M.Tech-	1	NON -	COL	Identify various surface flaws by using Liquid penetrant
15	Machine	2015171206	DESTRUCTIVE	CO1	inspection and Magnetic particle inspection
	Design		EVALUATION	CO2	 Apply the systematic understanding of knowledge on radiography
				CO3	Demonstrate comprehensive understanding of Ultrasonic
	M.Tech-			co.	Illustrate the fundamentals of tribology and the tribological
15		2015151205	TREE OF COLU	COI	parameters of all classes of materials
15	Machine	2015171207	TRIBOLOGY	CO2	Explain about various Lubrication Technquies
	Design		l .	CO3	Demonstrate about bearing propeties and analyze about bearing
	<u> </u>			CO4	Classify different types of seals and its uses
				CO1	Identify the prediction of mechanical failure and discuss various
	M.Tech-	!	DD A CWILLIAM	COA	Employ the concept of griffith's analysis for energy release rate
15	Machine	2015171208	FRACTURE	CO2	and describe the concept of stress intensity factor in linear elastic
	Design		MECHANICS	COS	Analyze failure prediction parameters and crack tip opening
				CO3	displacement in Elastic- Plastic fracture mechanics
				CO4	Assess the fatigue damage and creep damage and illustrate the
	M.Tech- Machine	2015171209	THEORY OF	COI	• Understand the importance of yield point in the stress analysis.
15				CO2	Analyze the governing equations of plasticity
	Design		PLASTICITY	CO3	Apply principles of plasticity in the design analysis
				CO4	Evaluate various structural sections
	M.Tech-]		CO1	Understand the continuum mechanics.
15	Machine	: 2015171210	CONTINUUM	CO2	Solve the continuum mechanics problem using Eulerian and
13	Design	: 20151/1210	MECHANICS	CO3	• Use the laws of continuum mechanics for mass conservation and
	Design			CO4	Use the continuum mechanics theories for Elastic Materials,
				CO1	Viscous fluids, linear visco- elasticity
	M.Tech-		MECHANICS	CO2	Understand the importance of composite materials Distinguish and for the composite materials
15	Machine	2015171211	OF COMPOSITE	CO3	Distinguish various materials used for matrix and reinforcement
	Design		MATERIALS	CO4	• Recommend the composite material according to the application
	-			COI	• Modify the material according to the types of loads coming on to
	M.Tech-		PRESSURE	CO2	To identify different materils of pressure vessels and select the Design dome bends shall connections that hards and select the
15	Machine	2015171212	VESSEL	CO3	Design dome bends, shell connections, flat heads and cone Analyse the discontinuity stresses in vessels.
	Design		DESIGN	CO4	Evaluate the stress theory of failure of vessels subject to steady
	<u> </u>			COI	Organize the gear production processes
	M.Tech-		GEAR	CO2	Inspect the gear wheel for its correct profile
15	Machine	: 2015171213	ENGINEERING	CO3	Decide the type of gear used for a particular application
	Design		DITOR ISSERBIO	CO4	Propose a correct gear for transmitting the various loads coming
			l		Understand the design considerations of mechatronics systems,
	M.Tech-			CO1	intelligent machines, automatic machines, and various actuating
15	Machine	2015171214	MECHATRONI	CO2	
	Design	2013171217	CS	CO3	Develop motion control algorithms and mechanical configuration Applying sensor interfacing and architecture of intelligence.
	Design			CO4	Analyze sensor interfacing and architecture of intelligent Assess the machine vision goseant and various pieces.
	-		DESIGN FOR	CO1	Assess the machine vision concept and various micro Understand to relate design rules for many forward like.
	M.Tech-		l .	CO2	Understand to relate design rules for manufacturability. Apply design rules for each of monthisting.
15	Machine	2015171215	MANUFACTURI	CO ₂	Apply design rules for ease of machining.
	Design		NG AND		g g g g g g g g g g g g g g g g g g g
	 	 	ASSEMBLY	CO1	Apply design guidelines to assembly
	l		DESIGN	CO1	Classify the various types of load applications Decide the correct profile of the components
	Mariana B		 F F F F M T A T M 	1.532	IP LIPCURE INC COFFECT MODULE Of the components
15	M.Tech-	2015171221	1		Constants Contact provide of the components
15	Machine	2015171221	PRACTICE	CO3	Create the final dimensions of the components
15	1	2015171221	1		Create the final dimensions of the components Construct the final component in all the parameters

15	M.Tech- Machine Design	2015171232	TECHNICAL SEMINAR-II	CO1 CO2 CO3 CO4	Carryout literature survey, and choose a relevant topic reported in recent IEEE/Springer/SAGE/conference publications / transactions in the domain of mechanical engineering Simulate and analyze the results reported in the chosen paper for Communicate effectively before the expert panel and develop Respond to the queries raised by the evaluation committee and
15	M.Tech- Machine Design	2015171235	COMPREHENSI VE EXAM	CO1 CO2 CO3	Demonstrate knowledge in the program domain. Present views cogently and precisely. Exhibit professional etiquette suitable for career progression. Apply mechanical engineering theory and software development fundamentals to produce experimental and computing-based



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					N TECHNOLOGY (A)
	DEPA				RONICS ENGINEERING
			VR - 17 COURSE (
Program me Code	Programme Name	Course Code	Course Name	СО	Course Outcome: After the completion of the course student will be able to
				COI	Understand the behavior of DC motors and also model the different Dc motors.
			ELECTRICAL	CO2	Apply the knowledge of reference frame theory for AC machines to model the induction and Synchronous
42	M.Tech-Power and Industrial Drives	2042171101	MACHINE MODELING &	- 1	Evaluate the steady state and transient behaviour of induction and synchronous machines to Propose the suitability of drives for different industrial applications.
	Dive		ANALYSIS		Analyze the characteristics of different types of DC motors and 2-Phase induction machines using voltage and torque equations to differentiate the behaviour and
				ľ	to propose their applications in real world. Examine the operation of phase controlled converters
43	M.Tech-Power	2042471102	ANALYSIS OF POWER	CO1	and AC voltage converters. Determine the requirements of power factor correction in converter circuits.
42	Drives	2042171102	ELECTRONIC CONVERTERS	CO3	Analyze the operation of 3-phase inverters with and without PWM techniques.
				CO4	Describe principles of operation and features of
				COI	Describe the single phase and three phase converter fed
	M.Tech-Power		POWER		Investigate the two quadrants and four quadrant control
42	and Industrial	2042171103	ELECTRONIC	CO2	of DC motor drives. Develop the mathematical models of DC drive
	Drives		CONTROL OF DC DRIVES		Analyze the four quadrant and closed loop control of D
				C04	DC converter fed DC drive. Learn about the transmission system's performance
	M.Tech-Power and Industrial Drives	2042171104	FLEXIBLE AC TRANSMISSION SYSTEMS	CO1	improvement using FACTS. Understand about the impact of series compensation
42				CO3	recognize the impact of UPFC'S.
				CO4	Determine an appropriate FACTS device for different types of applications.
				CO1	Understand the state variable approach's which are suitable for higher order systems.
	M.Tech-Power		MODERN	CO2	Analyze the concepts of controllability and observabilit
42	and Industrial Drives	2042171105	CONTROL THEORY	CO3	Examine the various non-linearities using phase plane analysis and descriptive functions.
				CO4	Learn stability and instability problems in continuous time invariant systems.
				COI	Have the knowledge on causes of power quality, power quality parameters and sources of transient over voltage and providing protection to transient over voltages.
42	M.Tech-Power	2042171106	POWER QUALITY		Understand the effects of harmonics, sources of harmonics and harmonic minimization.
42	Drives	2042171100	TOWER QUALITY	CO3	Analyze long duration voltage variations and regulation of voltage variations.
				CO4	Describe power quality aspects in distributed generation and develop solutions to wiring and grounding problem
					State and formulate the optimization problem, without and with constraints, by using design variables from an
				CO1	engineering design problem. Apply classical optimization techniques to minimize o maximize a multi-variable objective function, without
	M.Tech-Power		OPTIMIZATION	CO2	with constraints, and arrive at an optimal solution. Formulate a mathematical model and apply linear
42	and Industrial Drives	2042171107	TECHNIQUES	CO3	programming technique by using Simplex method. Alsextend the concept of dual Simplex method for optimal
				CO4	Utilize gradient and non-gradient methods to nonlinear optimization problems and use interior or exterior penalty functions for the constraints to derive the optin
				CO5	Solve practical problems using PSO and genetic algorithms for simple electrical problems.
	M.Tech-Power		ENERGY	COI	Perform energy audit in different organizations.
42	and Industrial	2042171108	AUDITING,	CO2 CO3	
1	Deivoe	1	CONSERVATION	× [Onderstand the advantages to improve the power fac

	ן אווזים ן				
			MANAGEMENT	CO4	Evaluate the depreciation of equipment.
	M.Tech-Power		ADTITION	CO1	Understand the different types of neural networks.
42	and Industrial	2042171109	ARTIFICIAL	CO2	Develop algorithms using genetic algorithm for
42	Drives	2042171109	INTELLIGENCE	CO3	optimization and training algorithms for neural
	Drives		TECHNIQUES	CO4	Design the fuzzy logic controllers for different systems.
				CU4	Apply Al Techniques in power electronics and DC
	M.Tech-Power			CO1	Understand the various schemes and protection schemes
42	and Industrial	2042171110	HVDC -	CO2	of HVDC transmission.
44.2	Drives	20421/1110	TRANSMISSION		Identify the basic HVDC transmission equipment.
	Drives			CO3	Explain the control of HVDC systems.
				CO4	Discover the interaction of HVDC system and the
				COI	Examine power semiconductor device properties via
	M.Tech-Power		SIMULATION	CO2	Analyze and implementing the speed controlling
42	and Industrial	2042171121	LABORATORY	COZ	techniques for AC machines in simulation.
	Drives		LABORATORI	CO3	Explain the operation of various power electronic converters in simulation.
				CO4	Implement the PWM techniques in simulation.
			<u> </u>	C04	Analyse the control operation of non-isolated switch
				CO1	mode converters and switch mode converters with small
				CO2	Explain the operation of isolated switch mode
	M.Tech-Power		SWITCHED MODE	Ç02	Analyse the control schemes for resonant converters and
42	and Industrial	2042171201	POWER	CO3	design of magnetic components.
	Drives		CONVERSION	COS	
				CO4	Design the non-isolated switch mode converters based on linearization.
				CO5	
		<u> </u>		CU3	Examine the operation of resonant converters and soft
				CO1	Explain operation of induction motor and analyse speed control of AC drivesby VSI fed drives.
	M.Tech-Power		POWER	COI	Understand the vector control of induction motors and
42	and Industrial	2042171202	ELECTRONIC	CO2	l .
72	Drives	20421/1202	CONTROL OF AC	CO3	operation of traction drives.
	Dilves		DRIVES	CU3	Analyze control schemes to synchronous motor drives.
				CO4	Recognize the control of stepper motor and switching
			<u> </u>	C04	reluctance motor.
				CO1	Discover the input and output interfaces for PIC
	M.Tech-Power and Industrial Drives		DIGITAL CONTROLLERS	CO2	microcontrollers and DSP processors.
42		2042171203		CO ₂	Acknowledging how to develop ALP for DSP
42				CUS	Design PWM controls for power electronic circuits using
					Explain the operation of the ADC in the DSP and
	1			CO4	overview of the Event manager (EV), Event Manager
				C04	Interrupts , General Purpose (GP) Timers. Apply the knowledge of sensors used in PMSM which
	1			CO1	
				COI	can be used for controllers and synchronous machines. Analyze the characteristics of different types of PM type
	M.Tech-Power				brushless DC motors and the different controllers used i
42	and Industrial	2042171204	SPECIAL	CO2	
72	Drives	2042171204	MACHINES	- 002	electrical machines to propose the suitability of drives
	Dilva			CO3	Classify the types of DC linear motors and apply the
İ				- 03	knowledge of controllers to propose their application in
				CO4	Evaluate the steady state and transient behavior linear induction motors.
				C04	
	M.Tech-Power			COI	Identify and adopt the different alternate energy sources
42	and Industrial	2042171205	RENEWABLE	CO2	for power generation.
***	Drives	20421/1203	ENERGY SYSTEMS	CO2	Classify the different renewable energy systems.
	Duttes			CO3	Analyze the different renewable energy systems.
-	 			CO1	Integrate the various sources and the grid in the best
			DEACTIVE		Understand the different types of compensation and the
	M.Tech-Power		REACTIVE	CO2	Discover different load compensations schemes.
42	and Industrial	2042171206	POWER	1	Obtain the mathematical model of reactive power
	Drives		COMPENSATION	CO3	compensating devices.
	1		& MANAGEMENT		Know the application of reactive power compensation in
			 	CO4	electrical traction & arc furnaces.
					Analyze the distribution networks for V-drops, PLoss
	M.Tech-Power		ELECTRICAL	CO1	calculations and reactive power
42	and Industrial	2042171207	DISTRIBUTION		Design equipment for compensation of losses in the
	Drives		SYSTEMS	CO2	distribution system.
	200 1 1 443		CIGILATIO	CO3	Create protective systems and coordinate the devices.
				CO4	Understand the capacitive compensation and voltage
					Analyze the effect of various power quality issues in
				CO1	distribution system and their mitigation principles.
	M.Tech-Power		CUSTOM BOWER		Describe the operation of custom power devices for
42	and Industrial	2042171208	DEVICES	CO2	reactive power & harmonic compensation.
	Drives		DEVICES	CO3	Operate the high speed transfer switches.
	,		4		On all and sections at 1 (period)

	_				
			[Examine the operation and control of custom power
				CO4	devices in power system applications.
			,	CO1	Analyze the smart grid policies and developments in
Į					Develop concepts of smart grid technologies in hybrid
	M.Tech-Power		CMARTORIS	CO2	electrical vehicles etc.
42	and Industrial	2042171209	SMART GRID		Understand the effect of smart substations, feeder
	Drives		TECHNOLOGIES	CO3	automation, GIS, micro grids and distributed generation
				-	Discover the effect of power quality in smart grid and to
				CO4	understand latest developments in ICT for smart grid.
				CO1	Understand the PLCs and their I/O modules.
			PROGAMMABLE	CO2	Develop control algorithms to PLC using ladder logic
١	M.Tech-Power		LOGIC		Manage PLC registers for effective utilization in
42	and Industrial	2042171210	CONTROLLERS &		different applications and also handle data functions &
	Drives		APPLICATIONS	CO3	control of two axis, their axis robots with PLC.
				CO4	Design PID controller with PLC.
					Explain the working of phase controlled converters, AC
		ı		CO1	voltage controllers and DC-DC converters.□
					Analyze the phase controlled converters, AC voltage
	M.Tech-Power		POWER	CO2	controllers, DC-DC converters and PWM inverters.
42	and Industrial	2042171221	CONVERTERS	<u> </u>	Examine the three phase SVPWM Pulse generation
	Drives		AND DRIVES LAB		using PIC Micro controller/DSP processor and DSP
				CO3	based V/F Control of 3 phase Induction motor.
					Investigate the speed control and operation of power
ļ				CO4	converter fed motors.



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING VR17 - COURSE OUTCOMES		VIGNAN'S INSTITUTE OF INFORMATION TECHNOLOGY (A)								
SNO Programme mane mane mane mane mane mane mane										
Software Course value Course v		VR17 - COURSE OUTCOMES								
25	SNO	~		Course Code	Course Name	CO				
Software Cost Apply metries to estimate size Cost Apply Capital vocate of estimation tools Cost Apply Capital vocate Cost C			M.Tech-		Software		Develop Different diagrams for software requirements.			
Description of the process of the	1	25		2025171101						
Software Engineering Packed Process			Engineering		Estimation					
2 Software Engineering 3 25 Software Engineering 4 2 Software Engineering 5 25 Software Engineering 6 25 Software Engineering 6 25 Software Engineering 7 25 Software Engineering 8 25 Software Engineering 8 25 Software Engineering 9 25 Software Engineering 10 2 Software Engineering 11 2 Software Engineering 12 Software Engineering 13 Software Engineering 14 2 Software Engineering 15 Software Engineering 16 Software Engineering 17 Software Engineering 18 Software Engineering 18 Software Engineering 19 Software Engineering 19 Software Engineering 20 Softw			M.Tech-			CO1	Describe the Quality Metrics used for Software maintenance			
Engineering and Reuse COJ Make use of Function Point Metrics to Measure Software Projects	2	25		2025171102						
Software Project and Process Software Project and Process Software project and Process Management Col.			Engineering		and Reuse					
2025171109 202		-	1000							
Beginnering Management Cod Implement the project plans through managing people. God develop the skills for tracking and controlling software deliverables Cod Develop PERL stripts or whe document with XML parses Cod Apply XML for whe document with XML parses Cod Apply XML for whe document with XML parses Cod Apply XML for whe document with XML parses Cod Apply XML for whe document with XML parses Cod Apply XML for whe document with XML parses Cod Apply XML for whe document with XML parses Cod Apply XML for whe document with XML parses Cod Apply XML for whe document with XML parses Cod Apply XML for whe document with XML parses Cod Apply XML for whe document with XML parses Cod Apply XML for whe document with XML parses Cod Apply XML for whe document with XML parses Cod Apply XML for whe document with XML parses Cod Apply XML for whe document with XML parses Cod Apply XML for whe document with XML parses Cod Apply XML for whe document and core composents of Hadoop Cod Apply data modelling techniques to large data sets using map reduce Cod Anultz eitherizes for Hadoop subjections using PIP Cod Cod Anultz eitherizes for Hadoop Cod Anultz eitherizes for whe applications Cod Anultz eitherizes for Hadoop Cod Anultz eitherizes for Hadoop Cod C	3	25		2025171102						
A	3	23		2025171103			implement the project plans through managing people,			
Software Engineering 2025171104 Web Technologies CO2 Apply XML for web document with XML parsers CO3 Build web applications using PHP My SQL &AJAX. CO4 Develop PERL scripts for web applications. CO3 Involvement data structures required for developing map reduce CO3 Involvement data structures required for developing map reduce CO3 Involvement data structures required for developing map reduce CO3 Involvement data structures required for developing map reduce CO3 Involvement data structures required for developing map reduce CO3 Apply data modelling techniques to large data sets using map reduce CO4 Analyze interfaces for Hadoon's architecture and cost of the proposal per control of the proposal per co			Engineering		- Management		develop the skills for tracking and controlling software deliverables			
Eagineering M. Tech- Software Engineering M. Tech- Software Engineering M. Tech- Software Engineering M. Tech- Software M. Tech- Software Engineering M. Tech- Software M. Tech- Software Engineering M. Tech- Software Engineering M. Tech- Software M. Tech- Software Engineering M. Tech- Softwa		'					Develop client-side scripts with JavaScript and DHTML.			
Sugmerring COA Develop PERL scripts for web applications.	4	25		2025171104	Web Technologies					
M. Techsoftware Engineering			Engineering	_						
Software Engineering Part			M.Tech-			CO1	Implement data structures required for developing map reduce			
Engineering M.Tech- Software Engine	5	25		2025171105	Big Data Analytics		Interpret Hadoop's architecture and core components of Hadoop			
M. Techsoftware Engineering 2025171120 Scripting Lunguages COL Develop PERL scripts for web applications.			Engineering	-						
Software Engineering Cost-piping Languages Cost-piping Language,			M. Co.							
Languages Cod Build web applications using PHP Cod Design applications using TCL Cod Implement MP Reduce Program to connect to Mx5QL database Implement PHP program for conclusionage. Cod Implement MP Reduce Program to connect to Mx5QL database Implement PHP program for conclusionage. Cod Implement MP Reduce Program to connect to Mx5QL database Implement MP Reduce Program to connect to Mx5QL database Cod Implement MP Reduce Program to connect to Mx5QL database Cod Implement MP Reduce Program to connect to Mx5QL database Cod Implement MP Reduce Program to connect to Mx5QL database Cod Implement MP Reduce Program to connect to Mx5QL database Cod Implement MP Reduce Program to connect to Mx5QL database Cod Implement MP Reduce Program to connect to Mx5QL database Cod Implement MP Reduce Program to connect to Mx5QL database Cod Implement MP Reduce Program to connect to Mx5QL database Cod Implement MP Reduce Program to connect to Mx5QL database Cod Implement MP Reduce Program to connect to Mx5QL database Cod Implement MP Reduce Program to	6	25		2025171106	Scripting					
M.Tech- Software Engineering 2025171121 SE Lab 1 COI Demonstrate the constructs of Ruby scripting Language, use of Perl CO2 Implement PERL program to connect to MySQL database COI Implement PERL program to connect to MySQL database COI Implement PERL program to connect to MySQL database COI Coll	0	25		20251/1106	Languages	CO3				
CO2 Implement PERL program to connect to MySQL database			Engineering							
Engineering M.Tech- Software Engineering Describe the repertion danal structure and build the system the components CO1 Explain the fundamental conclust used for Software Security CO2 Explain the fundamental concepts of SoA CO2 Manalyze SoA for Enterprise Solution Assets CO3 Describe Herelware Engine			M.Tech-				Demonstrate the constructs of Ruby scripting Language, use of Perl			
Engineering CO4	7	25		2025171121	SE Lab 1					
Software Engineering M. Tech-Software Engineering M. Tech-Software Engineering Software Engineering 2025171201 Software Engineering 2025171201 Software Engineering 2025171202 Software Engineering 2025171202 Software Engineering 2025171202 Software Engineering 2025171203 Software Engineering 2025171204 Software Engineering 2025171205 Software Engineering 2025171204 Software Engineering 2025171205 Software Engineering 2025171205 Software Engineering 2025171205 Software 2025171205 Software Engineering 2025171206 Software Engineering 2025171206 Software Engineering 2025171206 Software Engineering 2025171207 Software 2025171207 Software Engineering 2025171207 ERP & Supply Chain Management Cod Company Cod Company Cod	1		Engineering							
Software Engineering Page			M Tech-		_					
Software Column	8	25	Software	2025171132	l –					
Software Software Software Engineering Software Architecture And Design Patterns Software Software Software Software Software Software Engineering Software Software Software Engineering Software										
25 Software Engineering 2025171201 Software Engineering 2025171202 Software Engineering 2025171203 Software Engineering 2025171203 Software Engineering 2025171203 Software Engineering 2025171204 Software Engineering 2025171204 Software Engineering 2025171204 Software Engineering 2025171205 Software Engineering 2025171204 Software Engineering 2025171205 Software Engineering 2025171206 Software Engineering 2025171206 Software Engineering 2025171206 Software Engineering 2025171207 Software Engineering 2025171207 Software Engineering 2025171206 Software Engineering 2025171206 Software Engineering 2025171206 Software Engineering 2025171206 Software Engineering 2025171207 ERP & Supply Chain Management 2025171207 ERP & Supply Chain Management 2025171208 E-Commerce 2025171208	<u> </u>	-	14.00							
Architectures Cold Design Patterns	n	25		2025171201						
M.Tech-Software Engineering 2025171202 Software Quality Assurance And Testing Coulomb	^	25					Design creational and structural patterns			
25	<u> </u>		- Supurcering		Design Fatterns		Outline about behavioural pattern and case study in uitlizing the			
Column			M.Tech-	2025171202	Software Quality	CO1				
11 25	10	25	1	-025171202			Name and describe different testing techniques and approaches			
25			Engineering		Testing					
25	ļ		M.Tech-							
M. Tech- Software Engineering 2025171204 Service Oriented Architectures CO1 Describe the Fundamental concepts of SOA	11	25	1	2025171203	Cyber Security					
M.Tech-Software Engineering 2025171204 Service Oriented Architectures CO1 Describe the Fundamental concepts of SOA CO2 Analyze SOA for Enterprise Solution Assets			Engineering							
25			M Tb							
Engineering M.Tech- Software Engineering Describe Business intelligence and Knowledge management System CO2 Describe Business intelligence and Knowledge m	12	25		2025171204	Service Oriented	CO2	Analyze SOA for Enterprise Solution Assets			
M.Tech- Software Engineering Describe Hunten Software Secure Soft					Architectures					
25 Software Engineering Software Engineering Software Engineering CO2 Verify the effectiveness of a secure software design solution.	<u> </u>	-								
Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering M.Tech- Software Engineering Engineerin			1	2025171205	Secure Software					
M.Tech- Software Engineering Systems Engineering Systems Engineering CO1 Classify Various Management Information Systems CO2 Describe Business intelligence and Knowledge management Systems CO3 Identify key organization objectives and processes of an information CO4 Analyze the Information System Application like Basic Accounting CO1 Categorize various Online Analytical processing tools	13	25]						
Software Engineering 2025171206 Systems Engineering CO2 Describe Business intelligence and Knowledge management System CO3 Identify key organization objectives and processes of an information CO4 Analyze the Information System Application like Basic Accounting CO4 Analyze the Information System Application like Basic Accounting CO4 Categorize various Online Analytical processing tools CO2 Make use of Business modules in ERP Package CO3 Analyze different metrics in Supply Chain Management CO4 Determine Service Levels in Managing Supply Chains CO4 Determine Service Levels in Managing Supply Chains CO4 Determine Service Levels in Managing Supply Chains CO5 Demonstrate an retailing in E-commerce CO2 Demonstrate an retailing in E-commerce by using the effectiveness CO3 Describe Internet trading relationships including Business to Consumer, Business-to-Business, Intra organizational CO4 Describe about Consumer Search and Resource Discovery CO5 Illustrate importance and characteristics of graphical user interface.			Engineering			CO4	Manage Secure Software for an Enterprise			
25 Software Engineering 2025171206 Systems Engineering CO2 Describe Business intelligence and Knowledge management System CO3 Identify key organization objectives and processes of an information CO4 Analyze the Information System Application like Basic Accounting CO4 Analyze the Information System Application like Basic Accounting CO5 Categorize various Online Analytical processing tools			M.Tech-	202515100	S					
M.Tech- Software Engineering M.Tech- Software Engineering M.Tech- Software Engineering M.Tech- Software Engineering M.Tech- Software Engineering M.Tech- Software Engineering M.Tech- Software Engineering M.Tech- Liser Interface CO4 Analyze the Information System Application like Basic Accounting CO5 Categorize various Online Analytical processing tools CO2 Make use of Business modules in ERP Package CO3 Analyze different metrics in Supply Chain Management CO4 Determine Service Levels in Managing Supply Chains CO1 Understand the basic concepts of E-commerce CO2 Demonstrate an retailing in E-commerce by using the effectiveness CO3 Describe Internet trading relationships including Business to Consumer, Business-to-Business, Intra organizational CO4 Describe about Consumer Search and Resource Discovery CO5 Illustrate importance and characteristics of graphical user interface.	14	25	1	2025171206						
M.Tech- Software Engineering M.Tech- Software Engineering M.Tech- Software Engineering M.Tech- Software Engineering M.Tech- Liser Interfece M.Tech-			Engineering		rangineering					
25 Software Engineering M.Tech- Software Engineering M.Tech- Engineering M.Tech-			M. /P. 1							
Chain Management CO3 Analyze different metrics in Supply Chain Management CO4 Determine Service Levels in Managing Supply Chains CO1 Understand the basic concepts of E-commerce CO2 Demonstrate an retailing in E-commerce by using the effectiveness CO3 Describe Internet trading relationships including Business to Consumer, Business-to-Business, Intra organizational CO4 Describe about Consumer Search and Resource Discovery M.Tech- M.Tech- M.Tech- M.Tech- M.Tech- M.Tech- CO3 Analyze different metrics in Supply Chain Management CO4 Describe Internet trading relationships including Business to Consumer, Business-to-Business, Intra organizational CO4 Describe about Consumer Search and Resource Discovery CO5 Illustrate importance and characteristics of graphical user interface.	15	25	l .	2025171207		CO2				
M.Tech- Software Engineering M.Tech- Liser Interfere M.Tech- M.Tech- M.Tech- M.Tech- M.Tech- M.Tech- M.Tech- M.Tech- M	1.5	دد	1		Chain Management	CO3	Analyze different metrics in Supply Chain Management			
M.Tech- Software Engineering M.Tech- M.Tech- Liser Interfece M.Tech- M.T		-								
16 25 Software Engineering 2025171208 E-Commerce CO3 Describe Internet trading relationships including Business to Consumer, Business-to-Business, Intra organizational CO4 Describe about Consumer Search and Resource Discovery M.Tech- Liser Interface.	1		M T							
Engineering CO3 Consumer, Business-to-Business, Intra organizational CO4 Describe about Consumer Search and Resource Discovery M.Tech- Liser Interface CO3 Applying hymographical user interface.	16	25	1	2025171209	F-Commerce					
CO4 Describe about Consumer Search and Resource Discovery M.Tech- Hear Interface CO3 Applying hymnon about constitution hymnon interface CO3 Applying hymnon about constitution hymnon interface CO3 Applying hymnon about constitution hymnon interface CO3 Applying hymnon about constitution hymnon interface CO3 Applying hymnon about constitution hymnon interface CO3 Applying hymnon about constitution hymnon interface CO3 Applying hymnon about constitution hymnon interface CO3 Applying hymnon about constitution hymnon interface CO3 Applying hymnon about constitution hymnon interface CO3 Applying hymnon about constitution hymnon about constitution hymnon about constitution hymnon and constitution hymnon about constitution hymnon and constitution hymn	***	23	1		E-Conmerce	CO3				
M.Tech- CO1 Illustrate importance and characteristics of graphical user interface.						CO4				
Il can Interfere CO2 Analyze human characteristics human interestics results			M To-L							
	17	25		2025171200	User Interface					

47 [ا بد	OVIEWALE	2020111207	Design	CO3	Apply better screen design techniques.
1	- 1	Engineering		Design -	CO4	Analyze windows, components and Interaction Devices
_						Differentiate among various cloud offerings, cloud environments,
- 1		M.Tech-	- 1	-		Analyze various cloud platforms and cloud applications.
18	25	Software	2025171210	Cloud Computing		Survey the policies and mechanisms for resource management,
		Engineering		<u> </u>		Choose among different storage technologies for cloud like DFS,
-						Describe the evolution of Software Defined Networks
		M.Tech-		Software Defined		Classify VMware framework for network virtualization
19	25	Software	2025171211	Networks		Implement Switching and Firewall using SDN
		Engineering		Networks	CO4	Classify Different data center networks
-				-	CO1	Enumerate the list of IoT Applications
		M.Tech-				Evaluate different IoT application architectures
20	25	Software	2025171212	Internet Of Things		
		Engineering	202011122		CO3	Construct IoT applications with Cloud for data analytics
					CO4	Chose a real world commercial platform for deploying IoT
- 1	M.Te				CO1	Perform different testing on given application
21	25	Software	2025171221	SE Lab 2	CO2	Build test cases and documentation for various case studies
21	20	Engineering	20201,1221	SE Lad 2	CO3	Implement UML design for various Design Patterns
					CO4	Develop Test case Hierarchy
					CO1	Carryout literature survey, and choose a relevant topic reported in
		M.Tech-	!		CO2	Simulate and analyze the results reported in the chosen paper for
22	25	Software Engineering	2025171232	Technical Seminar2	CO3	Communicate effectively before the expert panel and develop
					CO4	Respond to the queries raised by the evaluation committee and
						audio-ga.
				Comprehensive Exan	COI	Analyze a complex computing problem and to apply principles of
1						computing and relevant disciplines to identify solutions
			1			Design, implement, and evaluate a computing-based solution to meet
		M.Tech- Software Engineering			CO2	a given set of computing requirements in the context of the
23	25					Apply computer science theory and software development
					CO3	
			i			fundamentals to produce computing-based solutions. Recognize professional responsibilities and make informed
					CO4	
						judgments in computing practice based on legal and ethical
1						apply the software engineering principles in planning, formulating
					CO1	an innovative design/ approach and computing the requirements
		M.Tech-				appropriate to chosen topic within the context of legal, societal and
24	25	Software	2025172138	Project Work	CO2	Ability to perform individually accepting responsibility, taking
- '		Engineering		(Stage- I)	CO3	Ability to use formal and informal communications with guide.
		Lingmeeting		İ		Develop/implement the solutions with appropriate techniques,
1			İ		CO4	resources and contemporary tools for social relavent issues/problems
		 			-	apply the software engineering principles in planning, formulating
1		Į.			COI	an innovative design/ approach and computing the requirements
]	1				appropriate to chosen topic within the context of legal, societal and
						environment constraint.
1	1	Nom 1				Ability to perform individually accepting responsibility, taking
	25 25	M.Tech-		Project Work	CO2	initiative, and providing leadership, necessary to ensure project
25		Software	2025172238	(Stage-II)]	success
1		Engineering		(Ability to use formal and informal communications with guide,
				1	CO3	make presentations and prepare technical document.
	l				\vdash	mine branding and brahma maintain anaumann
1]				COA	Develop/implement the solutions with appropriate techniques,
					CO4	resources and contemporary tools for social relavent issues/problems
	1	1	1		1	



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ide: VSEZ, Duvvada, Visakha

VIGNAN'S INSTITUTE OF INFORMATION TECHNOLOGY (A)

DEPARTMENT OF MASTER OF BUSINESS ADMINISTRATION

VR17- COURSE OUTCOMES

				VR17- COURS	SE UU	TCOMES
SNO	Program me Code	Programme Name	Course Code	Course Name	СО	Course Outcome: After the completion of the course student will be able to
					COI	Extract Managerial skills of the students
		MBA-Master of		Deinsinles of	CO2	2. Identify the external and internal factors that influence on
1	1 E-00	Business	3099171101	Principles of Mnaagement		3. Analyze how an organization's leaders/managers utilize job
		Administration		Minaagement		design, positional power, and goal setting/performance
					CO4	4. Discuss leadership characteristics that produce high performing
					CO1	1. Identify the objectives, nature, scope, role & responsibilities of
				ľ		2. Predict the demand for a product or product mix of a company
		MBA-Master of	- 1		CO2	& to analyze various factors influencing demand elasticity.
2	1 E-00	Business	3099171102	Managerial		3. Examine optimum production & cost functions with the help of
		Administration		Economics	CO3	mathematical equations & by developing graphical solutions
		Administration	1			4. Discuss the concept of equilibrium price and output in different
	ļ				CO4	market situations i.e., perfect, monopoly, monopolistic &
		15774 25 4 6				1. Identify the types of Accounts and Principles.
	1 5 00	MBA-Master of	2000121102	Accounting For	CO2	2. Prepare Financial Statement.
3	1 E-00	Business	3099171103	Managers	CO3	3. Analyze the Financial Position of the Organization.
]	Administration		· · ·		4. Evaluate Cost and Cost behaviour.
					CO1	Discuss communication theories.
_		MBA-Master of		Managerial		2. Display Verbal and Non-Verbal Communication
4	1 E-00	Business	3099171104	Communication And Soft Skills	-	3. Develop Presentation Skills
		Administration				4. Design Business Report.
			-		CO1	Interpret business environment and its impact
		MBA-Master of		Business	CO2	Discuss the comprehensive structure of Indian economy
5	1 E-00	Business	3099171105	Environment		3. Debate on various Policies
		Administration		Environnient		4. Analyze the legal Regulations pertaining to business
	-				C01	Calculate descriptive statistical measures and appreciate the
]		ŀ		Formulate basic concepts of probability and theoretical
		MBA-Master of		Quantitative	CO2	probability (binomial, normal but not poisson) distributions.
6	1 E-00	Business	3099171106	Analysis for Business		3. To solve a simple ordinary least squares regression model with
U	1 12-00	Administration			CO3	one explanatory variable, apply the model, and calculate the
		Administration		Decisions	000	4. Apply quantitative models (linear programming and network
	1	ļ	1		CO4	analysis) at an introductory level, with emphasis on relevant data
	-		 		CO1	1. Identify the softwares required for analysis.
		MBA-Master of		Information	CO2	2. Apply the Financial Modelling Techniques.
7	1 E-00	Business	3099171121	Technology Lab	CO3	Evaluate data using statistical techniques.
		Administration			CO4	
	 				CO1	Design the presentation using charts. 1. Identify the sources of Finance.
		MBA-Master of		CINIANCIAI	CO2	2. Evaluate Profitable Investment Proposals.
8	1 E-00	Business Administration	3099171201	FINANCIAL MANAGEMENT		
			1		CO3	3. Analyze proportions of Retention and Dividend Payout Ratio.
<u> </u>	-					4. Design Credit Policies for Business.
	1	MBA-Master of	r		CO1	1. Identify the roles of HR Manager.
9	1 E-00	Business	3099171202	Human Resource	CO2	2. Interpret current trends and practices in the field of HR
	'	Administration		Management		
<u> </u>	1		-		CO4	
		MBA-Master of	F	A.C. 1. 12	COI	1. Identify core concepts of marketing and the role of marketing in
10	1 E-00	Business	3099171203	Marketing	CO2	
-	1 - 3	Administration		Management	CO3	
<u> </u>					C04	
		MBA-Master o	F	Production And	CO1	
11	1 E-00	Business	3099171204	Operations	CO2	
[**	1 12-00	Administration	1	Management		3. Develop an integrated framework for strategic thinking and
		Auministration	<u>' </u>	management	CO4	
		MBA-Master o			CO1	
12	1 12 00		1	Business Research	CO2	<u> </u>
12	1 E-00	Business Administration	3099171205	Methodology	CO3	<u> </u>
		Administration	'	1	CO4	4. Caluculate Business Problems using appropriate methods.
		1.001.75	_		COI	
		MBA-Master o	1	ORGANIZATION	_	
13	1 E-00	1	3099171206	AL BEHAVIOUR		
		Administration	וי		CO4	
-	-	+			COI	
		MBA-Master o	ı		CO2	
14	1 E-00	Business	3099171231	Mini Projects	CO3	
1	l	A desinietentia	,	· ·		3.Analyze and interpret the data

ţ	1	Aumuistration [1	Г	CO4	A Deannes and apparent the corner
-+						4.Prepare and present the report 1. Identify the practical and integrative model of strategic
	- 1	MBA-Master of		STRATEGIC		2. Apply the Environmental Scanning Techniques
15	1 E-00		3099172101	MANAGEMENT		3. Analyze the formulation and structure of Organizational
		Administration	1			4. Design the Organizational Strategy.
				LECAL		Outline the Indian Contract Act.
]		MBA-Master of	2000172102	LEGAL	CO2	2. Identify the rights of Unpaid Seller.
16	1 E-00	Business	3099172102	ASPECTS FOR BUSINESS	CO3	Discuss various aspects of Negotiable Instruments and
	ļ	Administration		BOSINESS		4. Debate on various Cyber Laws.
		MBA-Master of		BUSINESS		1. Identify the role of Ethical Values of an Organization.
17	1 E-00	Business	3099172103	ETHICS		Debate the global perspective of Unethical practices.
-11	1 15-00	Administration	3077172103	CORPORATE		3. Discuss the Ethical practices in Functional areas.
		Administration		GOVERNANCE		4. Relate the role of Corporate Governance practices in Indian
	[MBA-Master of	i			1.Conduct field survey on
18	1 E-00	Business	3099172133	Case Study	CO2	2.Apply the theortical concept
		Administration				3. Analyze and interpret the data
						4.Prepare and present the report
Ì		MBA-Master of		PROPUGE		1. Infer the basic concepts of Product.
19	1 E-00	Business	3099172104	PRODUCT MANAGEMENT	CO2	2. Design Development of New Product.
		Administration		MANAGEMENT		3. Build the brand positioning.
			<u> </u>	DROMOTION		Discuss the Channels of Distribution and Packaging. List out the various concepts of Promotion and Distribution.
		MBA-Master of		PROMOTION		
20	1 E-00	Business	3099172105	AND		Outline the challenges of Distibution System. Discuss the various Channels of Distribution.
	1	Administration		DISTRIBUTION		
				MANAGEMENT		4. Debate the various ethical and social issues in Distribution
	'	MBA-Master of		INVESTMENT		Identify different segments of Financial Markets. Evaluation of various Asset Valuation Models.
21	1 E-00	Business	3099172106	ANALYSIS AND	_	
	1	Administration		PORTFOLIO		3. Apply various Investment Analysis Tools.
				MANAGEMENT	CO ₁	4. Adopt and apply portfolio evaluation models for the realistic
		MBA-Master of		BANKING AND		Identify the fundamental concepts of Banking System in India. Discuss the various types of Banking Funds.
22	1 E-00	Business	3099172107	INSURANCE		Discuss the various types of Banking Funds. Evaluate the latest regulations and innovations in Banking.
		Administration		MANAGEMENT	CO4	Evaluate the fatest regulations and innovations in Banking. Analyze the LIC and GIC.
			-	COMPENSATIO		Analyze the Lic and Olc. Discuss concepts of compensation and designing of effective
		MBA-Master of		_ ·	CO2	List out various Wage payment systems.
23	1 E-00	Business	3099172108	N AND	CO ₂	Evaluate administration of wage and salary.
ı		Administration		PERFORMANCE	CO4	Evaluate autilities after the content of wage and satary. 4. Analyze effectiveness of performance management in an
-			-	MANAGEMENT	COI	Analyze effectiveness of performance management in an I. Identify the essential concepts of industrial relations.
		MBA-Master of Business Administration		MANAGEMENT	CO2	Discuss the Trade Unions and Work-Life Balance.
24	1 E-00		3099172109	OF INDUSTRIAL	CO3	Design the Wage and Salary Administration.
				RELATIONS	CO4	4. Interpret and Solve the Grievances in Industries.
			<u> </u>		- 004	Acquires knowledge of the functional components within
					COI	
		MBA-Master of	,	LOGISTICS AND	1001	Analyze the difference between logistics and supply chain
25	1 E-00	Business Administration	3099172201	SUPPLY CHAIN	CO2	
=	1 25-00			MANAGEMENT		3. Evaluate warehousing and transportation options and
ļ			1	International Control of the Contr	CO3	
			[CO4	
	-	1			COI	
		MBA-Master of	1	ENTREPRENEU	CO2	
26	1 E-00	Business	3099172202	1		3. Extract the essence of entrepreneurial motivation
		Administration	네	DEVELOPMENT		4. Elucidate the problems of women entrepreneurship
	 				COI	
		MBA-Master of	ı		CO2	
27	1 E-00	Business	3099172234	MOOCS	CO3	
1		Administration	1		C04	
	1				COI	
		MBA-Master o	1	SERVICES	CO2	
28	1 E-00	Business	3099172204	MARKETING	CO3	
		Administration			CO4	
	1				COI	
	1,	MBA-Master o		CONSUMER	CO2	
29	1 E-00	Business	3099172205	BEHAVIOUR	CO3	
		Administration	ין		CO4	
	1	1	1		COI	
	1	MBA-Master o	ar l	International	CO2	
30	1 E-00	1	3099172206	1		3. Develop a frame of reference through which to identify,
1 30	1 2-00	Administration	1 "	Management	CO	
1		- commentation	"		CO4	
			1	1	1 004	r pr. mespret me memadonal taxation methods and management (

31	1 E-00	MBA-Master of Business Administration	3099172207	Financial Risk Management	CO3	Discuss risk management concepts in present business situations. Evaluate financial risk measurement methods Demonstrate financial risk measurement tools Apply advanced financial risk management techniques
32	1 E-00	MBA-Master of Business Administration	3099172208	GLOBAL HUMAN RESOURCE MANAGEMENT	CO1 CO2 CO3	Demonstrate across a broad knowledge of HRM strategies, Policies and practices across a range of cultural and nations. Differentiate intentional and domestic dimension of the Discuss the concepts of expatriation To analyze and apply international HRM concepts in relation to global ethical issues in the work place
33	1 E-00	MBA-Master of Business Administration	3099172209	MANAGEMENT OF CHANGE AND DEVELOPMENT	CO1 CO2 CO3	Discuss the relevance of change management approaches and models to a variety of situations where appropriate Identify range of skills relevant to the change management Articulate management competencies in Organizational Apply tools and models to explore underlying organizational and behavioural issues that may affect the change process
34	1 E-00	MBA-Master of Business Administration	3099172238	Major Project & Comprehensive Viva	CO1 CO2 CO3 CO4	



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			VIGNAN'S II			MATION TECHNOLOGY
				DEPART		
				VR17 - COU	RSE OU	JTCOMES
S. No	Progra mme Code	Programme Name	Course Code	Course Name	CO	Course Outcome: After the completion of the course student will be able to
	1			· [COI	Understand the basic C Programming
				С		knowledge on arrays, strings and functions
1	1F-00	MCA-Master of Computer	4010171101	Programming		knowledge on pointers, structures and unions
1	1100	Application	4010171101	and Data	CO4	summarize recursive methods and compare iterative and
		Application		Structures		Illustrate the usage of various data strucutres and familizrize
				[CO6	Slove problems using various data strucutres like linear list,
				1		The basic components of a computer, including CPU,
	l		'			memories, and input/output, and their organization
					CO1	representation of data, addressing modes, instructions sets.
						Discriminate different register transfer micro operations,
	,				CO2	Principles of hardwired and micro programmed control
		MCA-Master of				Demonstrate various fixed and floating point arithmetic
2	1F-00	Computer	4010171102	Computer		operations, performing the Arithmetic operations of binary
_	1	Application		Organization		number systems and formulating the arithmetic functions and
			l	!	CO3	solve scientific problems by means of a numerical analysis method
					C03	Extrapolate memory organization and input, output
	1	1			CO4	organizations
						Generalize pipe line and vector processing, multi processors and
					CO5	its applications.
	1				COI	Understanding different counting Techniques
			İ	Discrete		Apply different methods to solve homogeneous and non-
	l	MCA-Master of	4010171103	Mathematical	CO2	homogeneous recurrence relations
3	1F-00	Computer		Structures and		Apply graph theory concepts in core subjects such as data
		Application	1	Graph Theory	CO3	structures and network theory effectively
			1		CO4	Developing programs in R Language
					COI	understand the basic s of R Programming
		MCA-Master of Computer	4010171104	Statistical Programming		knowledge on R Programming Control statements and functions
4	1F-00				CO2	
		Application		with R	CO4	knowledge on Graphics Awareness on Statistical Concepts
		 	1	-	COI	To learn the concept and the role of accounting.
	1	ļ			CO2	To know the systems of accounting.
			1		-	To understand and the Preparation of trail balance - Fina
		MCA-Master of		Accounting	CO3	accounts.
5	1F-00	Computer	4010171105	and Financial	C04	To understand the concept of financial management.
]		Application		Management	CO5	To learn the concept of cost of capital.
	1				CO6	To understand the capital structure
			1		C07	To able to know the cost accounting.
<u> </u>				-	CO8	To learn the total computerized accounting system.
			1		CO2	Use English language fluently, accurately and appropriately. Discuss and discover barriers to effective communication.
\				English	- 002	Demonstrate skills in listening comprehension, GDs and
	1	MCA-Master of	1	Language	CO3	Interview.
6	1F-00	1	4010171121	Communication		Read and answer questions (orally and in writing) based or
\		Application		n Skills Lab	CO4	passages.
	1		1			Show effective writing skills in academic and professiona
					CO5	contexts.
				c	COI	Able to write programs in C Language
	1	MCA-Master of		Programming	CO2	Develop logical and analytical thinking in writing c programs
7	1F-00	1 .	4010171122	and Data	1	Knowledge in writing programs in various concepts like arrays.
ļ		Application		Structures Lal	CO2	functions, pointer etc How to read and write contents from or into a file
<u> </u>					C03	Manipulate data within R and to create simple graphs and chart
					COI	used in introductory
		MCA-Master of		Statistical	CO2	Perform and interpret different distribution using R
8	1F-00		4010171123	Programming	:	Carry out hypothesis testing and calculate confidence intervals
		Application		with R Lab		Perform linear regression
l					CO3	models for data analysis
					COI	Understand the basic Java Programming
		MCA-Master o		1		knowledge on Inheritance, Packages and Interfaces in JAVA
1		A DATE ASSISTANT A		OOPS	CO2	INDOMINE OF THE PROPERTY OF TH

,	LECTUR	Computer	4010111201	Through JAVA	CO3	knowledge on Exception Handling, Multi Threading in JAVA
		Application		I III Ough JAVA		Illustrate the concept of event handling mechanism in JAVA
	\ \				CO5	Constructs window based application in JAVA
	 					Explain the different types of operating system and its
		1			CO1	architectures like distributed system, special purpose system
						Classifying the process management with typical concept of
	1				CO2	waiting time and turnaround time of different CPU scheduling
	1 1					Classifying the different type of memory management scheme
						and examine the page faults for different page replacement
	1 3 1	MCA-Master of		Operating	CO3	algorithms and allocation of frames
10	1F-00	Computer	4010171202	Systems		Define the different characterstics of deadlock occurances and
		Application		'		correction measure for recovery. Explain the security and
	l i				CO4	privacy issues measurement for the data and system.
				l l		Describing the Classes and the implementation
1		1				Describing the file management scheme and its implementation, explaining different type of file organization and allocation
	l ì			1 1		method and at last structure of disk scheduling and its structure
l					CO5	method and at last structure of disk scheduling and its structure
					CO1	The students will know about the various myths that exist in the
				[CO2	The meaning of a process and the various process models
	1	MCA-Master of		1 1		the various methods of Requirements elicitation, prioritization,
111	1F-00	Computer	4010171203	Software	CO3	specification and validation of requirements
1 ''	1100	Application	4010171205	Engineering	CO4	The meaning of architecture and various architectural styles
		Appacation		1 1	CO5	The principles and guidelines for good coding
						The testing process, various testing strategies and testing
<u> </u>	-			-	CO6	techniques
				Operations	C01	Understanding different counting Techniques
	1	MCA-Master of		Research for	000	Apply different methods to solve homogeneous and non-
12	1F-00	Computer	4010171204	Computer	CO2	homogeneous recurrence relations
		Application	1	Applications	CO3	Apply graph theory concepts in core subjects such as data
	1				CO4	Analyse logical structure and able to apply inference theory to verify the consistence of data
					CO1	understand the basic s of Computer Graphics
1		MCA-Master of	1	Computer	CO2	knowledge on simulators,2D,3D,Animation
1.3	1F-00	Computer	4010171205	Graphics	CO3	knowledge on object representation, line, circle Design
	1	Application		Отарина	CO4	Awareness on programs of computer graphics
_	- 				COI	Able to write programs in Java Language
l		MCA-Master of		OOPS		Develop logical and analytical thinking in programming
14	1F-00	Computer	4010171221	Through JAVA Lab	CO2	concepts.
1		Application		Lan	CO3	Knowledge in writing programs in various concepts like
		1			CO1	successfully design and implement a web site.
	1	MCA-Master of		Web		Demonstrate the ability to analyze, identify and define the technology
15	1F-00	Computer	4010171222	Technologies	CO2	required to build and implement a web site
"		Application		Lab	CO3	used in the creation of a web site.
					C04	Utilize and apply the technical, ethical and interpersonal skills needed
			1	 	CO1	to function in a cooperative environment. Analyze the structure and basic architectural components
				Operating	H-001	Understand and analyse theory and implementation of
		MCA-Master of		System &	CO2	different operating system aspect
16	1F-00	Computer	4010171223	Computer	CO3	Design and apply two dimensional graphics and
	ļ	Application		Graphics Lab	<u> </u>	Design and apply two difficulties and apply three dimensional graphics and
			l		C04	transformations.
		1	i	1	COI	Student can able to describe the Architecture of Database
		1			CO2	Student can design different ER Models
	1				CO3	Student can able to differentiate the knowledge in TRC & DRC
1		MCA-Master of	i .	Database	CO4	Student can compare relational model with the structured query
17	1F-00	Computer	4010172301	Management	CO5	Student can able to design the new database
		Application		Systems	C06	Student can perform transactions for new concepts
					1	Student can differentiate different indexing techniques in real
1_					C07	time
					C01	Students are able to develop a dynamic webpage by the use of
						Students will be able to connect a jour amorning a DDMC see
			1		CO2	Students will be able to connect a java program to a DBMS and perform insert, update and delete operations on DBMS table.
		1	1		- 002	Students will be able to write a server side java application
	1	MCA-Master of	1	Advanced		called Servlet to catch form data sent from client, process it and
18	4E+09		4010172302	JAVA	CO3	1 '
I	1	Annlination	1	I Dennenmeinn		Terror or announce.

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26 IF-00 Computer Application Computer Application Computer Service CO2 Students will learn different type of error detection and control for data link layer protocol and understanding the difference type of routing algoritm 27 IF-00 Computer A010172403 Data CO1 Student will able to know various types of data and how the various type of control ty	26 IF-00 Computer Application ADIO172402 Application CO2 Students will learn difference for data link layer protocomputer Application Data warehousing and Mining CO2 Students will able to know the known of Application MCA-Master of Computer Application MCA-Master of Computer Application MCA-Master of Computer Application MCA-Master of Computer Application MCA-Master of Computer Application MCA-Master of Computer Application Mobile different type of Adhors to a classify the functionality of different type of Adhors to a classify the classify the classification to a classify the classification the classification the classification the classification the classification the classification the classification the classification the classification the classification the classification the classification the classification the classification the classification the classification the classification the	
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Application CO2 type of routing algoritm MCA-Master of 1F-00 Computer 4010172403 warehousing CO1 Student will able to know various types of data and how warehousing CO2 Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will have the knowledge of different structure of Western Students will be stated by the stated will be stated by the stated b	Application CO2 type of routing algoritm MCA-Master of CO2 Student will able to know which warehousing and Mining MCA-Master of MCA-Master of CO2 Student will have the known warehousing and Mining MCA-Master of CO2 Students will have the known warehousing and Mining MCA-Master of CO2 Students will have the known warehousing and Mining MCA-Master of CO2 Students will have the known warehousing and Mining MCA-Master of CO2 Students will have the known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing and Mining MCA-Master of CO3 Student will able to known warehousing warehousing warehousing warehousing warehousing warehousing warehousing warehousing warehousing warehousing warehousing warehousing warehousing warehousing warehousing warehousing warehousing w	100
27 1F-00 MCA-Master of Computer 4010172403 Data warehousing warehousing CO1 Student will able to know various types of data and how warehousing Students will have the knowledge of different structure of Wo	27 1F-00 MCA-Master of Computer Application MCA-Master of MCA-Master of MCA-Master of Computer Application MCA-Master of Computer Application Mobile Mobile Mobile Mobile different type of Adhoc tops	
27 1F-00 Computer 4010172403 warehousing Soc Students will have the knowledge of different structure of We	27 1F-00 Computer Application 4010172403 warehousing and Mining CO2 Students will have the kr CO2 Students will have the kr CO2 Students will have the kr CO3 Students will have the kr CO	ow various types of data and how
1 I Students with nave the knowledge of different structure of we	Application and Mining CO2 Students with nave the kr MCA-Master of Mobile Computer 4010172404 Mobile different type of Adhoc top	
Application	MCA-Master of Mobile classify the functionality of different type of Adhoc top	nowledge of different structure of We
MCA Macter of classify the functionality of every individual lawer Classifying the	28 LE-00 Computer 4010172404 VIOUTE different type of Adhoc tops	every individual layer. Classifying the
28 1F-00 Computer 4010172404 Millione different type of Adhoc topology and transmission of controlling the		
Computing	Application Computing COI data on every layer	

- 1		1	1			Apply the basics of human and computational abilities and
				-		limitations
-		l l		ļ-		Apply new theories, tools and techniques in HCI.
			1	**		Have a capacity to analyze and design software systems,
20		MCA-Master of	4010153405	Human		components to meet desired needs. Apply the fundamental aspects of designing and evaluating
29	1F-00	Computer	4010172405	Computer		
		Application		Interaction		interfaces.
						Practice a variety of simple methods for evaluating the quality
	1 1			}-		of a user interface
	1	1				Apply appropriate HCI techniques to design systems that are
						usable by people.
30	1F-00	MCA-Master of	4010172406	Cloud		Evaluate the different view of virtual servers and its computing
_		Computer		Computing		collaboration with different applications with virtual work
			i	-		Understand the fundamental principles of Software Project You will have good knowledge of the issues and challenges
		MCA-Master of		Software		faced while doing the Software project Management and be
31	1F-00	Computer	4010172407	Project	- 1	familiar with the different methods and techniques used for
		Application		Management	CO2	•
						project management
				-		Will be able to do the Project Scheduling, tracking, Risk Identify problems that are amenable to solution of AI methods,
						and which AI methods may be suited to solving a given
		MCA-Master of		Artificial	COL	•
32	1F-00	Computer	4010172408		COL	problem.
	1	Application		Intelligence	CO2	Formalize a given problem in the language/framework of
					CO2	different Al methods
					CO3	Implement basic AI algorithms
		MCA-Master of			COI	Exploration and analysis of various types of timers and
33	1F-00	Computer	4010172409	Embeded		Student will able to do deep discussion about message queues,
		Application		Systems		mailboxes, and pipes. Describe the process of effective memory
					CO2	management
	1					
				Soft Skills Lab		The learner will be able to maintain work life balance and will
		MCA-Master of	4010173431		COI	become professionally and ethically sound in overcoming stress.
34	1F-00	Computer	4010172421			The learner will be able to maintain interpersonal relationships
	1	Application			CO2	by managing emotional intelligence.
				1		The learner will be able to acquire employability and problem
					CO3	solving skills.
	1					To understand the basic principles, concepts and applications of
		MCA-Master of		Data	CO1	data warehousing and data mining,
35	1F-00	Computer	4010172422	Warehousing		
	1	Application		and Mining		Ability to do Conceptual, Logical, and Physical design of Data
		Application		Lab	CO2	Warehouses OLAP applications and OLAP deployment.
					CO3	Have a good knowledge of the fundamental concepts that
	1	MCA-Master of		Object	COI	Understand the Case studies and design the Model.
36	1F-00	Computer	4010172423	Oriented	CO2	Understand how design patterns solve design problems.
	**	Application		Analysis and	CO3	Develop design solutions using creational patterns.
				Design Lab	CO4	Construct design solutions by using structural and behavioral
			Į.		COI	Understand the Case studies and design the Model.
		MCA-Master of	1		CO2	Understand how design patterns solve design problems.
37	1F-00	Computer	4010172431	Mini Project	CO3	Develop design solutions using creational patterns.
		Application		1		Construct design solutions by using structural and behavioral
					CO4	patterns
					_	Understand the concepts of Big data and challenges in
				1	COL	processing Big Data
					CO2	Understand Hadoop architecture and eco-system.
		MCA-Master of	1	Big Data		Gain conceptual understanding of Hadoop Distributed Fil
38	1F-00	Computer	4010173501	Analytics	CO3	System.
		Application		Analytics		Understand the concepts of map and reduce and functions
		1			CO4	programming
			1			Identify appropriate techniques and tools to solve actual Bi
	1			1	CO5	Data problems.
	1		 	1	COI	Ability to understand and reason out the working of network
	+		1			,
			1			L Company of the Comp
<u> </u>		MCA-Muster of			CO2	To teach students the use of basic socket programming Utilities
10	16-00	MCA-Master of	1	Network	CO2	
39	1F-00	Computer	4010173502	Network Programming	CO3	To teach students the principles of socket programming
39	1F-00		1		CO3	To teach students the principles of socket programming To familiarize students with the concepts, design, and structure
39	1F-00	Computer	1		CO3	To familiarize students with the concepts, design, and structure To be able to build an application of UNIX programming i
39	1F-00	Computer	1		CO3 CO4	To teach students the principles of socket programming To familiarize students with the concepts, design, and structure To be able to build an application of UNIX programming i socket.
39	1F-00	Computer	4010173502		CO3	To teach students the principles of socket programming To familiarize students with the concepts, design, and structure To be able to build an application of UNIX programming i

	1700	Lombard	4010112202	Programming [CO3	Build software for real needs
		Application			CO4	Explain to testing Orielly
					C01	Explore various security policies and evolution of security.
		MCA-Master of		l		Investigate more on various catalog approaches and cyb
41	1F-00	Computer	4010173504	Cuban Samurita	CO2	security objectives.
7.	11-00	Application	4010173304	Cyber Security	CO3	Analyze cyber user and conflict issues.
		riplacation		[CO4	Review cyber management and infrastructure issues.
					CO5	Examine various case studies on cyber security policies.
					COI	Explain the role of forensics in preventing various forms of
				1		Develop skills in distinguishing various types of computer
	ļ	MCA-Master of		_		crimes and identify the digital fingerprints associated with
42	1F-00	Computer	4010173505	Computer	CO2	criminal activities.
		Application		Forensics		Illustrate how to apply different forensic analysis tools to
	1				CO3	recover important evidence for identifying computer crimes.
					CO4	Explain about threats and compare various threats.
					CO5	Summarize the need for surveillance and list the tools used.
					COI	Gain an understanding of the theories and concepts underlyin
				l -	COI	commerce.
					CO2	Apply e-commerce theory and concepts to what e-marketers
		MCA-Master of				doing in "the real world"
43	1F-00	Computer	4010173506	E-Commerce	CO3	Review e-Commerce infrastructures including architecture
		Application		l	CO3	models, security & payment systems.
					CO4	Improve familiarity with current challenges and issues in e-
				l	CO4	commerce.
			1		CO5	Identify business models surrounding e-Commerce include
					COS	marketing strategies
					COI	Demonstrate knowledge and understanding of the security and
		MCA-Master of		1	COI	ethical issues of the Internet of Things
44	1F-00	Computer	4010173507	Internet of	CO2	Conceptually identify vulnerabilities ,including recent attacks ,involving the Internet of Things
	** **	Application	4010175567	Things	CO3	Develop critical thinking skills
	ł			l		
					CO4	Compare and contrast the threat environment based on Indust or device type.
			·		CO1	Developed understanding of technical aspect of Multimedia
				! !		Developed understanding of technical aspect of Multimedia
		MCA-Master of		Multimedia	CO2	Understand various file formats for audio, video and text med
45	1F-00	Computer	4010173508	Application	CO3	Develop various Multimedia Systems applicable in real time.
		Application		Development	CO4	Design interactive multimedia software.
						Apply various networking protocols for multimedia
					CO5	lapplications.
					CO1	Analyze the Conventional Software Management and
						Demonstrate the principles of conventional software
					CO2	Engineering, Life cycle Phases, and Artifacts of the process.
		MCA-Master of		Software		Apply the Software testing Work Flows of the proce
46	1F-00	Computer	4010173509	Testing	CO3	Checkpoints of the process and Iterative Process Planning.
		Application		Methodologies		Develop automation Process, Project Control and Process
					CO4	instrumentation, tailoring the process in software testing,
						Evaluate the project organizations and responsibilities, futi
_			<u></u>		CO5	
						Isottware project management with case study
						software project management with case study To understand the basic principles, concepts of Big Data
						To understand the basic principles, concepts of Big Data
					COI	
		MCA-Master of		h'. p		To understand the basic principles, concepts of Big Data Analyze and interpret data using an ethically responsible approach,
47	1F-00	MCA-Master of Computer	4010173521	Big Data		To understand the basic principles, concepts of Big Data Analyze and interpret data using an ethically responsible approach,
47	1F-00		4010173521	Big Data Analytics Lab	COI	To understand the basic principles, concepts of Big Data Analyze and interpret data using an ethically responsible approach. Collect, manage, store, query, and analyze various form of big data
47	1F-00	Computer	4010173521	1 " 1	COI	To understand the basic principles, concepts of Big Data Analyze and interpret data using an ethically responsible approach. Collect, manage, store, query, and analyze various form of big data Gain hands-on experience on large-scale analytics tools to sol
47	1F-00	Computer	4010173521	1 " 1	CO1	To understand the basic principles, concepts of Big Data Analyze and interpret data using an ethically responsible approach. Collect, manage, store, query, and analyze various form of big data Gain hands-on experience on large-scale analytics tools to sol some open big data problems
47	1F-00	Computer	4010173521	1 " 1	CO1	To understand the basic principles, concepts of Big Data Analyze and interpret data using an ethically responsible approach. Collect, manage, store, query, and analyze various form of big data Gain hands-on experience on large-scale analytics tools to sol some open big data problems
47	1F-00	Computer Application	4010173521	Analytics Lab	CO1 CO2	To understand the basic principles, concepts of Big Data Analyze and interpret data using an ethically responsible approach. Collect, manage, store, query, and analyze various form of big data Gain hands-on experience on large-scale analytics tools to sol some open big data problems Understand the impact of big data for business decisions and strategy.
		Computer Application MCA-Master of		Analytics Lab	CO1 CO2 CO3	To understand the basic principles, concepts of Big Data Analyze and interpret data using an ethically responsible approach. Collect, manage, store, query, and analyze various form of big data Gain hands-on experience on large-scale analytics tools to sol some open big data problems Understand the impact of big data for business decisions and
47	1F-00	Computer Application MCA-Master of Computer	4010173521 4010173522	Analytics Lab Network Programming	CO1 CO2 CO3 CO4 CO1	To understand the basic principles, concepts of Big Data Analyze and interpret data using an ethically responsible approach. Collect, manage, store, query, and analyze various form of big data Gain hands-on experience on large-scale analytics tools to sol some open big data problems Understand the impact of big data for business decisions and strategy. Write shell script for basic network problems Write shell script for functions
		Computer Application MCA-Master of		Analytics Lab	CO1 CO2 CO3 CO4 CO1 CO2	To understand the basic principles, concepts of Big Data Analyze and interpret data using an ethically responsible approach. Collect, manage, store, query, and analyze various form of big data Gain hands-on experience on large-scale analytics tools to so some open big data problems Understand the impact of big data for business decisions and strategy. Write shell script for basic network problems Write shell script for functions Develop shell script for file handling problems.
		Computer Application MCA-Master of Computer Application		Analytics Lab Network Programming Lab	CO1 CO2 CO3 CO4 CO1 CO2 CO3	To understand the basic principles, concepts of Big Data Analyze and interpret data using an ethically responsible approach. Collect, manage, store, query, and analyze various form of big data Gain hands-on experience on large-scale analytics tools to sol some open big data problems Understand the impact of big data for business decisions and strategy. Write shell script for basic network problems Write shell script for functions Develop shell script for file handling problems. Develop solutions for real time problems
48	1F-00	Computer Application MCA-Master of Computer Application MCA-Master of	4010173522	Analytics Lab Network Programming Lab Python	CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4	To understand the basic principles, concepts of Big Data Analyze and interpret data using an ethically responsible approach. Collect, manage, store, query, and analyze various form of big data Gain hands-on experience on large-scale analytics tools to sol some open big data problems Understand the impact of big data for business decisions and strategy. Write shell script for basic network problems Write shell script for functions Develop shell script for file handling problems. Develop solutions for real time problems Learn how to install Python Software
		Computer Application MCA-Master of Computer Application MCA-Master of Computer		Network Programming Lab Python Programming	CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1	To understand the basic principles, concepts of Big Data Analyze and interpret data using an ethically responsible approach. Collect, manage, store, query, and analyze various form of big data Gain hands-on experience on large-scale analytics tools to sol some open big data problems Understand the impact of big data for business decisions and strategy. Write shell script for basic network problems Write shell script for functions Develop shell script for file handling problems. Develop solutions for real time problems Learn how to install Python Software Learn the flow control and arrays
48	1F-00	Computer Application MCA-Master of Computer Application MCA-Master of	4010173522	Analytics Lab Network Programming Lab Python	CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3	To understand the basic principles, concepts of Big Data Analyze and interpret data using an ethically responsible approach. Collect, manage, store, query, and analyze various form of big data Gain hands-on experience on large-scale analytics tools to sol some open big data problems Understand the impact of big data for business decisions and strategy. Write shell script for basic network problems Write shell script for file handling problems. Develop shell script for file handling problems. Learn how to install Python Software Learn the flow control and arrays Identify data structure for the given problem
48	1F-00	Computer Application MCA-Master of Computer Application MCA-Master of Computer	4010173522	Network Programming Lab Python Programming	CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2	To understand the basic principles, concepts of Big Data Analyze and interpret data using an ethically responsible approach. Collect, manage, store, query, and analyze various form of big data Gain hands-on experience on large-scale analytics tools to sol some open big data problems Understand the impact of big data for business decisions and strategy. Write shell script for basic network problems Write shell script for functions Develop shell script for file handling problems. Develop solutions for real time problems Learn how to install Python Software Learn the flow control and arrays

50	1F-00	MCA-Master of Computer Application	4010173632	Technical Seminar	CO2 CO3	Extend intellectual discovery and unravel complexities of thought. Evaluate initial hypotheses in light of evidence and collaborative discussion with the goal of making considered judgments. Improve reflective listening and inclusive, respectful conversation
12		MCA-Master of			CO2	Apply domain knowledge during the course of internship Develop/implement the solutions with appropriate techniques, resources and contemporary tools. Work independently and in a collaboration in multidisciplinary
51	1F-00	Computer Application	4010173637	Internship	CO3	environment and to allocate time effectively and manage to complete the work allotted within stipulated time. Exhibit integrity and ethical behavior while carrying out the
					CO4	internship and for the preparation of internship report and to demonstrate effective oral and written communication skills
52	1F-00	MCA-Master of Computer	4010173638	Project	CO1	Analyze a complex computing problem and to apply software engineer principles in design and investigation of optimized solutions. Investigate and develop computing-based solution using mordem tools that help in sustaining environment and society.
		Application			CO3	Use formal and informal discussions with team members and guide, make presentations and prepare technical document. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.





			VIGNAN'S	INSTITUTE (OF INFORMAT CHANICAL EN	ION TE	CHNOLOGY(A)
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S.No	Regula tion	Program me Code	Programme Name	Course Code	Course Name	CO	Course Outcome: After the completion of the course student will be able to
	VR17	03	B.Tech-Mechanical Engineering		-	COI	Enhance English Language by relating the ideas of eminent personalities.
	VR17	03	B.Tech-Mechanical Engineering			CO2	Articulate the technological advancements fluently.
1	VR17	03	B.Tech-Mechanical Engineering	1000171101	English- I	CO3	Inculcate the art of thinking and writing clearly and logically.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Enact various themes through team work and learn the usage of vocabulary through humourous texts.
	VR17	03	B.Tech-Mechanical Engineering			CO1	Solve the first and higher order linear differential equations.
2	VR17	03	B.Tech-Mechanical Engineering	1000171102	Engineering	CO2	Estimate extrema and series expansions of functions of several variables.
	VR17	03	B.Tech-Mechanical Engineering	1000171104	Mathematics-I	CO3	Interpret area and volume using double integral and triple integral.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Evaluate of solution of Ordinary differential equations by using Laplace Transform technique.
	VR17	03	B.Tech-Mechanical Engineering			COI	Categorize various types of polymeric materials, fuels, lubricants, refractories and establish their applications.
	VR17	03	B.Tech-Mechanical Engineering	1000171104	Engineering Chemistry	CO2	Analyse hardness of water and describe various softening methods
3	VR17	03	B.Tech-Mechanical Engineering			CO3	Illustrate the principles of green chemistry, corrosion and its prevention and demonstrate the construction and working of batteries
	VR17	03	B.Tech-Mechanical Engineering			CO4	Emphasize on various engineering materials like nano materials, solar cells and their applications.
	VR17	03	B.Tech-Mechanical Engineering			CO1	Choose algorithmic solutions for a given problem and Implementing basic programs in C.
4	VR17	03	B.Tech-Mechanical Engineering		Computer Programming	CO2	Apply decision making and Iterative feature of C Programming language effectively.
	VR17	03	B.Tech-Mechanical Engineering		using C	CO3	Design &Develop of recursive and non recursive function & their usage to build large modular programs.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Select problem specific data structure using suitable accessing methods.
	VR17	03	B.Tech-Mechanical Engineering			COI	Elucidate the natural resource & their importance for the sustenance of life and recognises the need to conserve natural resource
5	VR17	03	B.Tech-Mechanical Engineering	1000171112	Environmental	CO2	Gives the broad view on the various attributes of pollution & and their impact & measure to reduce he pollution along with waste management
3	VR17	03	B.Tech-Mechanical Engineering	1000171112	Studies	CO3	Debates on social issues both rural and urban environment possible means to combat the challenges and trace the legislation of India towards sustainability
	VR17	03	B.Tech-Mechanical Engineering			CO4	Educates about Environmental Impact Assessment Environmental Impact Statement & Environmental Audit
	VR17	03	B.Tech-Mechanical Engineering			CO1	Analyze the force systems for equilibrium conditions and able to draw free body diagram.
	VR17	03	B.Tech-Mechanical Engineering]	Engineering	CO2	Evaluate the frictional forces between contact surfaces.
6	VR17	03	B.Tech-Mechanical Engineering	1000171116	Engineering Mechanics	CO3	Differentiate between centroid and centre of gravity. Determine the centroid, centre of gravity and second moment of area for composite sections.

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	VR17	03	B.Tech-Mechanical Engineering			CO4	Analyze the motion and calculate trajectory characteristics.
	VR17	03	B.Tech-Mechanical Engineering			COL	Apply the usage of phonemes while referring to the dictionary
ŀ	VR17	03	B.Tech-Mechanical		English - Communication		· · · · · · · · · · · · · · · · · · ·
7	VK1/	0.5	Engineering	1000171121	Skills –	CO2	Articulate with others by using proper functions.
	VR17	03	B.Tech-Mechanical Engineering			CO3	Enact the roles with proper body language.
	VR17	03	B.Tech-Mechanical Engineering		Laboratory	CO4	Communicate fluently with proper pronunciation
	VR17	03	B.Tech-Mechanical Engineering	17		COI	Categorize various types of polymeric materials, fuels, lubricants, refractories and establish their applications.
Ī	VR17	03	B.Tech-Mechanical Engineering		[CO2	Analyze hardness of water and describe various softening methods
8	VR17	03	B.Tech-Mechanical Engineering	1000171127	Engineering Chemistry Laboratory	CO3	Illustrate the principles of green chemistry, corrosion and its prevention and demonstrate the construction and working of batteries
	VR17	03	B.Tech-Mechanical Engineering			CO4	Emphasize on various engineering materials like nanomaterials, solar cells and their applications.
	VR17	03	B.Tech-Mechanical			COI	Demonstrate and trace the execution of programs
			Engineering B.Tech-Mechanical				written in C language.
	VR17	03	Engineering	1000171128	Computer	CO2	Build C code for a given basic algorithms
9	VR17	03	B.Tech-Mechanical Engineering		Programming Laboratory	CO3	Develop Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor
	VR17	03	B.Tech-Mechanical Engineering			CO4	Solve File handling problems
	VR17	03	B.Tech-Mechanical Engineering			COI	Develop communication skills by inferring the technological advancements.
	VR17	03	B.Tech-Mechanical			CO2	Identify the life of eminent personalities.
10	VR17	03	Engineering B.Tech-Mechanical	1000171201	English- II -	CO3	Relate the importance of Environment and its
	VR17	03	Engineering B.Tech-Mechanical			CO4	sustainability to language learning Create the art of writing by applying apt
	VR17	03	Engineering B.Tech-Mechanical			COI	vocabulary and grammar. Estimate numerical solution of non Linear
	VR17	03	Engineering B.Tech-Mechanical		Engineering Mathematics-II		equation. Construct Interpolating polynomial for the given
11	VR17	03	Engineering B.Tech-Mechanical	1000171202		CO2	data. Calculate Numerical Solution of ODE and
			Engineering B.Tech-Mechanical				Numerical Integration. Evaluate Fourier series and Fourier transforms for
	VR17	03	Engineering			CO4	functions.
	VR17	03	B.Tech-Mechanical Engineering			COI	Solve simultaneous linear equations numerically using rank of a matrix and also Eigen values and Eigen vectors of a square matrix.
12	VR17	03	B.Tech-Mechanical Engineering	1000171203	Engineering	CO2	Identify and solve partial differential equations.
"-	VR17	03	B.Tech-Mechanical		Mathematics-III	CO3	Calculate gradient of a scalar function, divergence and curl of a vector function.
	VR17	03	Engineering B. Tech-Mechanical				Evaluate line, surface and volume integrals using
	VR17	03	Engineering B.Tech-Mechanical			CO4	appropriate integral theorems. Describe the wave phenomena of light and
	VR17	03	Engineering B.Tech-Mechanical			201	working principle of optical instruments. Apply the basic knowledge of acoustics and ultrasonics for the understanding of
13			Engineering	1000171204	Engineering	CO2	acoustics design and non-destructive testing.
	VR17	03	B.Tech-Mechanical Engineering		Physics	CO3	Understanding the fundamental concepts of nuclear reactions for working of nuclear reactors.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Discuss the structural, magnetic and electrical properties of materials.
	VR17	03	B.Tech-Mechanical Engineering			COI	Able to analyse the various electrical networks.

	VR17	03	B.Tech-Mechanical Engineering	:	Basic Electrical	CO2	Able to understand the operation of DC generators,3-point starter and conduct the Swinburne's Test.
14	VR17	03	B.Tech-Mechanical Engineering	1000171205	and Electronics - Engineering	CO3	Able to analyse the performance of transformer.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Able to explain the operation of 3-phase alternator and 3-phase induction motors.
	VR17	03	B.Tech-Mechanical Engineering			COI	Understand the use of drawing instruments to construct the polygons and curves
15	VR17	03	B.Tech-Mechanical Engineering	1000171206	Engineering Drawing	CO2	Learn the principle of orthographic projections. Draw Orthographic projections of points, lines.
	VR17	03	B.Tech-Mechanical Engineering			CO3	Draw the various types of planes and solids its views in different Positions
	VR17	03	B.Tech-Mechanical Engineering			CO4	Draw isometric views of simple objects
	VR17	03	B.Tech-Mechanical Engineering			CO1	Apply the usage of phonemes while referring to the dictionary
16	VR17	03	B.Tech-Mechanical Engineering	1000171221	English Communication	CO2	Articulate with others by using proper functions.
	VR17	03	B.Tech-Mechanical Engineering		Skills Lab-2	CO3	Enact the roles with proper body language.
_	VR17	03	B.Tech-Mechanical Engineering			CO4	Communicate fluently with proper pronunciation
	VR17	03	B.Tech-Mechanical Engineering			CO1	Experimentation of laws of vibrations in stretched string
	VR17	03	B.Tech-Mechanical Engineering		Engineering	CO2	Determination of velocity of sound, rigidity modulus of a wire, acceleration due to gravity, radius of gyration and Planck's constant.
17	VR17	03	B.Tech-Mechanical Engineering	1000171222	Physics Laboratory	CO3	Analyse the voltage vs. current characteristics of Zener diode and temperature vs. resistance characteristics of a thermistor
	VR17	03	B.Tech-Mechanical Engineering			CO4	Demonstration of formation Newton's rings, diffraction pattern using grating and induced magnetic field in a circular coil.
	VR17	03	B.Tech-Mechanical Engineering			COI	Understand different operations: Fitting, smithy, carpentry and Electrical wiring.
	VR17	03	B.Tech-Mechanical Engineering	1000171224	Engineering Workshop	CO2	Perform the fitting and carpentry operations.
18	VR17	03	B.Tech-Mechanical Engineering			CO3	Develop simple objects like funnel, elbow etc. using sheet metal.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Apply basic electrical engineering knowledge for house wiring practice like stair case wiring, series and parallel connections
	VR17	03	B.Tech-Mechanical Engineering			CO1	Construct various equilibrium diagrams in metals and alloys and understand metallographic structure influences the mechanical properties
19	VR17	03	B.Tech-Mechanical Engineering	1003172101	Metallurgy & Materials	CO2	Differentiate various class of materials based on the applications.
	VR17	03	B.Tech-Mechanical Engineering		Science	CO3	Estimate the mechanical integrity and failure in materials.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Prepare the new combinations of alloys, composites and nano-materials suitable for specific purposes.
	VR17	03	B.Tech-Mechanical Engineering			COI	Understand various stresses and strains in structural members under several loading conditions.
20	VR17	03	B.Tech-Mechanical Engineering	1003172102	Mechanics of	CO2	Evaluate the shear force, bending moment, deflection of beams, and torsional stresses for different loading and support conditions.
20	VR17	03	B.Tech-Mechanical Engineering	1003172102	Solids	CO3	Analyze the behaviour of different beams and columns for different loading and support conditions to assess societal issues

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	VRI7	03	B.Tech-Mechanical Engineering			CO4	Analyze the stresses in thin and thick pressure vessels to arrive an optimum section to withstand the internal pressure.
	VR17	03	B.Tech-Mechanical			COI	Understand the laws of thermodynamics.
	VR17	03	Engineering B.Tech-Mechanical		 		Apply the laws of thermodynamics to various
21	VR17	03	Engineering B.Tech-Mechanical	1003172103	Thermodynamic s	CO2	engineering systems Understand the psychrometric properties
	VR17	03	Engineering B.Tech-Mechanical				Analyze working of power cycle and their
			Engineering B. Tech-Mechanical			CO4	performance.
	VR17	03	Engineering B.Tech-Mechanical			CO1	Explain the basics of fluid statics and dynamics Analyze the flow behaviour of fluid using
22	VR17	03	Engineering B.Tech-Mechanical	1003172104	Fluid Mechanics & Hydraulic -	CO2	Bernoullis equation
22	VRI7	03	Engineering		Machines -	CO3	Apply the concept of boundary layer theory to internal and external flows
	VR17	03	B.Tech-Mechanical Engineering			CO4	Evaluate and analyze performance characteristics of hydraulic turbines and pumps
	VR17	03	B.Tech-Mechanical Engineering			COI	Draw simple machine elements including screw threads, bolts, nuts, keys.
	VR17	03	B.Tech-Mechanical Engineering			CO2	Drafting of cotter joints, riveted joints and bearings for societal applications.
23				1003172105	Computer Aided Machine	<u> </u>	Generate an assembly drawings as well as to
	VR17	03	B.Tech-Mechanical Engineering		Drawing	CO3	analyze and interpret assemblies of various engine parts, machine parts from part drawings.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Design and model various machine components assemblies.
	VR17	03	B.Tech-Mechanical	 		COI	Describe the economic activities performed by the businessmen in the business
24	VICI7		Engineering		Managaria1		for profit earning.
	VR17	03	B.Tech-Mechanical Engineering	1099172106	Managerial Economics	CO2	Analyze and implement operations on linked lists and demonstrate their applications.
-	VR17	03	B.Tech-Mechanical Engineering		&FinancialAnal ysis	CO3	Implement stacks and queues using arrays and linked lists.
	VR17	03	B.Tech-Mechanical				Prepare financial statements and understand and implement the capital budgeting
<u> </u>			Engineering B.Tech-Mechanical			CO4	tools and techniques. Calibrate flow measuring devices such as
	VR17	03	Engineering	1003172121	Fluid Mechanics & Hydraulic Machinery Lab	CO1	venturimeter, orifice meter
	VR17	03	B.Tech-Mechanical Engineering			CO2	Evaluate the major and minor losses in flow through pipes.
25	VR17	03	B.Tech-Mechanical Engineering			CO3	Determine the force exerted by a jet of fluid on vanes of different shapes by experimentation and
	1100 15	0.0	B.Tech-Mechanical				further compare with theoretical values. Analyse the performance characteristics of turbines
	VR17	03	Engineering			CO4	and pumps.
	VR17	03	B.Tech-Mechanical Engineering	!	Mechanics of	COI	Understand the behavior of different materials under tensile and shear loads
1	VR17	03	B.Tech-Mechanical Engineering			CO2	Determine the toughness and hardness of different materials by experimentation.
26	VR17	03	B.Tech-Mechanical Engineering	1003172122	Solids & Metallurgy Lab	CO3	Estimate the elastic constants by torsion test and deflection test on beams.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Characterize the microstructures of different ferrous and non ferrous metals.
	VR17	03	B.Tech-Mechanical			CO1	Perform kinematic analysis of various
	VR17	03	Engineering B.Tech-Mechanical				mechanisms. Describe different types of mechanisms based on
27	VR17	03	Engineering B.Tech-Mechanical	1003172201	Kinematics of Machinery	CO2	type of pairs. Analyze the different mechanism and its motion
	VRI7	03	Engineering B.Tech-Mechanical	-			transmission. Apply different mechanisms in real time
			Engineering B.Tech-Mechanical			CO4	applications. Understand the working of internal combustion
	VR17	03	Engineering B.Tech-Mechanical			COI	engines and compressors. Describe the combustion phenomenon in SI and C
10	VR17	03	Engineering	1003172203	Thermal	CO2	engines.

1 40 1				1000172202			
	VR17	03	B.Tech-Mechanical Engineering		Engineering – I	CO3	Determine the performance of IC engines.
	VRI7	03	B.Tech-Mechanical				Analyze and solve the problems on reciprocating
	V K 17		Engineering			Ç04	and rotary compressor.
	VR17	03	B.Tech-Mechanical Engineering			COL	Understand the casting, welding, sheet metal and
	410.44		B.Tech-Mechanical		-		powder metallurgy processess. Choose suitable fusion and solid state welding
	VR17	03	Engineering		3.5	CO2	process for specific application.
29			B.Tech-Mechanical	1003172203	Manufacturing - Technology -I		Estimate the force requirements for various bulk
	VR17	03	Engineering		reclinology -t	CO3	and sheet metal forming
			B.Tech-Mechanical				operations.
	VR17	03	Engineering			CO4	Classify the various powder metallurgy process and processing of plastics
				_		204	Describe the different types stresses under static
	VR17	03	B.Tech-Mechanical			COI	and fluctuating loading
			Engineering				condition.
1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		B.Tech-Mechanical		l <u>.</u> [Apply the knowledge of simple and variable
30	VR17	03	Engineering	1003172204	Design of	602	stresses in the design of fasteners
30			B.Tech-Mechanical	1003172204	Machine Members -I	CO2	like riveted, welded and bolted joints.
	VR17	03	Engineering		Wichibers -t	CO3	Design the various cotter joints, knuckle joint and shaft couplings.
			<u> </u>				Estimate the force requirements for various bulk
[VR17	03	B.Tech-Mechanical Engineering				and sheet metal forming
<u></u>						CO4	operations.
	VR17	03	B.Tech-Mechanical			COI	Understand the working principle of different
			Engineering B.Tech-Mechanical				measuring instruments.
	VR17	03	Engineering			CO2	Classify the various instruments to measure pressure, level, flow and speed
31				1002152205	Instrumentation		Describe the importance of measurement of stress,
	VR17	03	B.Tech-Mechanical Engineering	1003172205	& Control Systems	CO3	strain, force, torque, power
			Engineering		Systems		and humidity
	VR17	03	B.Tech-Mechanical		1		Explain various types of control systems and
	VK1/	0.3	Engineering			CO4	servomechanisms to measure
\vdash						C04	temperature, speed and position. Understand the concepts of scientific management
	VR17	03	B.Tech-Mechanical	1003172206		COI	and modern management
			Engineering		Industrial		theories
1 20	VR17	03	B.Tech-Mechanical		Engineering and		Choose the plant location and design a plant layout
32	 		Engineering B.Tech-Mechanical			CO2	for a specific industry
	VR17	03	Engineering		Management	CO3	Describe the statistical quality control technique in a manufacturing industry.
	11531-		B.Tech-Mechanical				Estimate the project completion time using PERT
	VR17	03	Engineering			CO4	and CPM techniques
1	VR17	03	B.Tech-Mechanical			CO1	Build sand mould for different patterns in casting
		- 0,5	Engineering	Į			process
	VR17	03	B.Tech-Mechanical Engineering		Production	CO2	Measure the properties of moulding sand to check
33			B.Tech-Mechanical	1003172221	Technology Lab		its suitability. Prepare weld joints using manual arc welding
	VR17	03	Engineering		Technology Lab	CO3	process.
	VR17	03	B.Tech-Mechanical				Develope various components by mechanical
	- 1817	٠,٠	Engineering			CO4	forming processes
	VR17	03	B.Tech-Mechanical	ļ		COI	Predict the performance characteristics of DC
			Engineering B.Tech-Mechanical	1			machines and induction motor Predict the regulation of single phase transformer
	VR17	03	Engineering		Electrical &	CO2	& alternator.
34			1	1003172222	Electronics		Perform experimentation on rectifiers and evaluate
	VR17	03	B.Tech-Mechanical Engineering		Engineering Lab	CO3	their
					Engineering Lao		characteristics.
	VR17	03	B.Tech-Mechanical				Investigate variuos industries in and around the
	-		Engineering			CO4	student's institute
	VR17	03	B.Tech-Mechanical			CO1	Understand the various production processes going in the industries with societal
		"	Engineering			201	machines.
	VR17	03	B.Tech-Mechanical	1			Relate the process of getting the relationships with
35	VKI/	0.3	Engineering	1003172231	Industrial Visit	CO2	the technical people ethically.
	VR17	03	B.Tech-Mechanical			CO3	Define the courses handled in course of study.
		1	Engineering	-			· ·
	VR17	03	B.Tech-Mechanical Engineering			CO4	Applythe knowledge of study in industrial
			Lugineering	<u> </u>		CU4	applications.

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	VR17	03	B.Tech-Mechanical				Analyze the stabilization of sea vehicles, aircrafts
	VIC17	ÇÜ	Engineering		,	COL	and automobile vehicles using gyroscopic
	-		B.Tech-Mechanical		-	COI	principles.
36	VRI7	03	Engineering	1003173101	Dynamics of	CO2	Define the torque and effect of friction in mechanical systems.
			B.Tech-Mechanical	1005175101	Machinery	CO2	Evaluate the dynamic forces acting on the
	VR I7	03	Engineering			CO3	flywheels and governors.
			B.Tech-Mechanical		l		Measure the balancing of rotary and reciprocating
	VR 17	03	Engineering			CO4	masses using analytical and graphical methods.
	110.17	0.2	B.Tech-Mechanical				Understand the metal cutting mechanisms and
	VR 17	03	Engineering			COI	different machining processes.
İ	UDIT	0.3	B.Tech-Mechanical		l i		Choose the suitable cutting tool material for
	VR 17	03	Engineering		l l	CO2	various machining operations.
37	1/0.13	03	B.Tech-Mechanical	1003173102	Manufacturing		Distinguish the various type of machining process
	VR17	03	Engineering		technology -II	CO3	for specific geometry of the final component.
			D.TI. MI				Define the importance of CNC machines and
	VR17	03	B.Tech-Mechanical				additive manufacturing processes for inductrial
			Engineering			CO4	needs,
			B.Tech-Mechanical				Design different types of bearings and various I.C
	VR17	03					engine parts like Piston, Connecting rod, Crank
			Engineering		l .	COI	shaft and Cylinder.
			B.Tech-Mechanical				Calculate the stresses in curved beams and design
38	VR17	R17 03 Engineering		Design of		power screws like screw jack, differential and	
	$oxed{oxed}$		Lugineering	1003173103	Machine Members – II	CO2	compounds screws.
	T		B.Tech-Mechanical				Design various power transmission elements such
	VR 17	03	Engineering				as belts, ropes, chains, pulleys and machine tool
						CO3	elements of levers.
	VR 17	03	B.Tech-Mechanical		[Choose the suitable gear drives for different
	*****		Engineering			CO4	applications.
			B.Tech-Mechanical				Understand the basic working principle and
	VR 17	03	Engineering				operation of all components in a steam power
	\vdash					CO1	plant.
39	VR 17	03	B.Tech-Mechanical		Thermal		Evaluate the performance of all components
			Engineering	1003173104	Engineering - II	CO2	employed in steam power plant.
	VR 17	03	B.Tech-Mechanical		Singincering - ti		Mesure the performance of impulse and reaction
			Engineering			CO3	turbines.
	VR17	03	B.Tech-Mechanical				Apply the principle of Newton laws to Jet and
	-		Engineering			CO4	rocket Propulsion systems.
	VR17	03	B.Tech-Mechanical	1003173105	Metrology		Understand the limits and fits for product quality
	 		Engineering			COI	of interchangeability and selective assembly
	VR17	03	B.Tech-Mechanical			600	Choose appropriate method for linear and angular
40			Engineering B.Tech-Mechanical			<u>C</u> O2	measuerements including optical instruments
40	VR17	03	1			600	Asses the surface roughness and inspect the
			Engineering			CO3	various parts with comparators
	VR 17	03	B.Tech-Mechanical				Choose the appropriate method and instruments for
	1817	0,5	Engineering			CO.4	inspection of various gear and thread elements and
			B.Tech-Mechanical			<u>C</u> 04	also evaluate the machine tool alignement
	VR 17	03	Engineering			COL	Understand the motion of a motorized gyroscope
	1		B.Tech-Mechanical		Kinematics & Dynamics Lab	CO1	when the couple is applied along its spin axis
	VR17	03	Engineering			CO2	Mesure the whirling speed of shaft theoretically
41			Engineering	1003173121		CO2	and experimentally
	VR17	03	B.Tech-Mechanical	1216/11/2001			Analyse simple and compound screw jack and
	```''	(J	Engineering			CO3	determine the mechanical advantage, velocity ratio
			B.Tech-Mechanical			CO3	and efficiency  Draw the characteristic curves for the radius of
	VR17	03	Engineering			CO4	
			B.Tech-Mechanical	-		C04	rotation and speed of the governors  Construct Valve and Port Timing plot in I C
	VR17	03	Engineering			COI	Engines
			B.Tech-Mechanical			COL	Evaluate the Performance the on 4/2 stroke CI/SI
4-	VR17	03	Engineering	]	Thermal	CO2	engines experimentally
42			B.Tech-Mechanical	1003173122	Engineering Lab	CO2	Analyze a heat balance sheet and estimate various
	VR17	03	Engineering	1	angineering Lab	CO3	
			B.Tech-Mechanical	1		_ = = = = = = = = = = = = = = = = = = =	heat losses in engines.
	VR17	03	Engineering			CO4	Apply preventive maintenance to the I C Engines
						CO4	Define the manusing and any in the
	VR17	03	B.Tech-Mechanical				Define the measuring and gauging instruments for
	```'	03	Engineering			COL	inspection of precision linear, geometric forms,
	 		B.Tech-Mechanical	1]	COI	angular and surface finish measurements
	VR17	03	1		Instrumentation		Analyse the calibration of instruments
13	VK1/	0.5	Engineering	1003173123		CO2	

] د-			B.Tech-Mechanical	ا جادانادس	and medology		Measure the alignment errors on machine tools
j	VR17	03	Engineering		Lab		using alignment tests.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Calibration of various instruments for measuring pressure, temperature, displacement, speed, vibration etc.
	VRI7	03	B.Tech-Mechanical Engineering			CO1	Relate Ethical Human Values
44	VR17	03	B.Tech-Mechanical Engineering	1000172101	IPR & Patents	CO2	Apply Engineering knowledge for societal benefits
44	VR17	03	B.Tech-Mechanical Engineering	1099173101	II K be t atents	CO3	Demonstrate responsibility for Safety, Risk & rights
	VR17	03	B.Tech-Mechanical Engineering			CO4	Outline the various Current Global Issues
	VR17	03	B.Tech-Mechanical Engineering			CO1	Understand the concepts of variational methods and weighted residual methods.
45	VR17	03	B.Tech-Mechanical Engineering	1003173201	Finite Element	CO2	Identify the suitable FEA elements such as bars, beams, plane and isoparametric elements to create Finite Element Model with respect to the application
	VR17	03	B.Tech-Mechanical Engineering		Methods -	CO3	Apply suitable boundary conditions to the finite element model and solve the equations.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Identify how the finite element method expands beyond the structural domain, for problems involving dynamics, heat transfer.
	VR17	03	B.Tech-Mechanical Engineering			COI	Understand the various modes of heat transfer.
	VR17	03	B.Tech-Mechanical Engineering			CO2	Evaluate heat transfer coefficients for natural convection and forced convection.
46	VR17	03	B.Tech-Mechanical Engineering	1003173202	Heat Transfer	CO3	Design and develop a heat exchanger.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Estimate the radiation emited by balck body and gray body.
	VR17	03	B.Tech-Mechanical Engineering			COI	Identify various robot configuration and components.
	VR17	03	B.Tech-Mechanical Engineering		Robotics	CO2	Select appropriate actuators and sensors for a robot based on specific application.
47	VR17	03	B.Tech-Mechanical Engineering	1003173203		CO3	Analyze kinematic and dynamic analysis for simple serial kinematic chains.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Define trajectory planning for a manipulator by avoiding obstacles.
	VR17	03	B.Tech-Mechanical Engineering	ı		CO1	Develop the different linear programming and assignment models for domain specific situations. Develop the different linear programming and assignment models for domain
48	VR17	03	B.Tech-Mechanical Engineering	1003173204	Operations Research	CO2	Analyze the different transportation models.
	VR17	03	B.Tech-Mechanical Engineering			CO3	Design inventory and queueing theory models for optimal decisions.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Apply optimal strategy to real time applications using dynamic programming and game theory.
	VR17	03	B.Tech-Mechanical Engineering			COI	Describe ER model and normalization for database design.
	VR17	03	B.Tech-Mechanical Engineering		INTRODUCTI ON TO DATA	CO2	Create, maintain and manipulate a relational database using SQL
49	VR17	03	B.Tech-Mechanical Engineering	1005173206	BASE MANAGEMEN	CO3	Design and build database system for a given real world problem
	VR17	03	B.Tech-Mechanical Engineering		T SYSTEMS	CO4	Examine issues in data storage and query processing and can formulate appropriate solutions.
	VR17	03	B.Tech-Mechanical Engineering			COI	Install Python IDE and run basic Python scripts.
	VR17	03	B.Tech-Mechanical Engineering		INTRODUCTI ON TO	CO2	Understand the operators, functions, key Concepts of Object Oriented Programming in python.
50	VR17	03	B.Tech-Mechanical Engineering	1005173207	PYTHON PROGRAMMI NG	CO3	Access Python from various online resources and import packages to the current working environment.

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VR17 03 Engineering 1003173291 CBCS (MOOCS) Co2 Choose job applications and career prospect (MOOCS) CO3 Organize their participation according to lead goals
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VR17 03 B.Tech-Mechanical Engineering VR18 D.Tech-Mechanical Engineering VR19 D.Tech-Mechanical Engineering Define various cutting operations on shaping planing and slotting, drilling, milling and grid
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VR17 03 B.Tech-Mechanical Engineering VR18 03 B.Tech-Mechanical Engineering VR19 04 D.Tech-Mechanical Engineering VR19 05 Define various cutting operations on shaping planing and slotting, drilling, milling and gri
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Figure ering VR17 03 B.Tech-Mechanical Engineering VR18 04 B.Tech-Mechanical Engineering VR19 04 B.Tech-Mechanical Engineering VR19 04 B.Tech-Mechanical Engineering VR19 04 B.Tech-Mechanical Engineering VR19 04 B.Tech-Mechanical Engineering VR19 04 B.Tech-Mechanical Engineering VR19 04 B.Tech-Mechanical Engineering VR19 04 B.Tech-Mechanical Engineering VR19 04 B.Tech-Mechanical Engineering VR19 04 B.Tech-Mechanical Engineering VR19
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VR17 03 Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering Industrial Engineering Indust
VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mec
VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering STech-Mechanical Engineering Define various cutting operations on shaping planing and slotting, drilling, milling and griphaning and slotting.
VR17 03 Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering STech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering CO1 Understand various machining operations on shaping and Metal Cutting Lab CO2 Lather machine. Define various cutting operations on shaping planing and slotting, drilling, milling and gri
VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering Machine Tools CO2 lathe machine. Define various cutting operations on shaping planing and slotting, drilling, milling and gri
VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering CO2 Lather machine. Define various cutting operations on shaping planing and slotting, drilling, milling and griphing and slotting, drilling, milling and griphing and slotting.
VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering CO1 Understand various machining operations on Shaping and Metal Cutting Lab Cutting Lab CO2 lathe machine. Define various cutting operations on shaping planing and slotting, drilling, milling and gri
VR17 03 B.Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering Nachine Tools and Metal Cutting Lab VR17 03 B.Tech-Mechanical Engineering CO2 lathe machine. Define various cutting operations on shaping planing and slotting, drilling, milling and gri
Segmenting VR17 03 Engineering B.Tech-Mechanical Engineering Cutting Lab Machine Tools and Metal Cutting Lab Cutting Lab Machine Tools and Metal Cutting Lab Cutting Lab Co2 lathe machine. Define various cutting operations on shaping planing and slotting, drilling, milling and grid
VR17 03 B.Tech-Mechanical Fugineering 1003173221 and Metal Cutting Lab Define various cutting operations on shaping planing and slotting, drilling, milling and gri
VR17 03 Engineering Cutting Lab planing and slotting, drilling, milling and gri
Engineering - - -
CO3 machines
VR17 03 B.Tech-Mechanical Choose suitable machine, based on the geom
Engineering CO4 final component
VR17 03 B.Tech-Mechanical Determine thermal conductivity of various
CO1 materials experimentally.
R Tech Mechanical Conduct investigation of heat flow when me
VR17 03 Projection placed at different angles by free convection
56
R Tech Mechanical
VR17 03 B. Tech-Mechanical Engineering CO3 Evaluate the effectiveness of heat exchanger
VR17 03 B. Tech-Mechanical Engineering CO3 experimentally.
VR17 03 B. Tech-Mechanical Engineering CO3 experimentally. VR17 03 B.Tech-Mechanical Engineering CO4 beat exchanger CO4 beat exchanger CO4 beat transfer experimentally.
VR17 03 B. Tech-Mechanical Engineering CO3 experimentally. VR17 03 B.Tech-Mechanical Engineering CO4 experimentally. VR17 03 B.Tech-Mechanical Engineering CO4 heat transfer experimentally. VR17 03 B.Tech-Mechanical Understand various analytical tools for
VR17 03 B. Tech-Mechanical Engineering CO3 experimentally. VR17 03 B.Tech-Mechanical Engineering CO4 heat transfer experimentally. VR17 03 B.Tech-Mechanical Understand various analytical tools for
VR17 03 B. Tech-Mechanical Engineering CO3 experimentally. VR17 03 B.Tech-Mechanical Engineering CO4 heat transfer experimentally. VR17 03 B.Tech-Mechanical Engineering CO4 heat transfer experimentally. Understand various analytical tools for Engineering CO1 Engineering Simulation.
VR17 03 B. Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 CAE Lab CO2 transfer mode.
VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR17 03 B. Tech-Mechanical Engineering VR18 D. Tech-Mechanical Engineering VR19 D. Tech-Mechanical Engineering VR10 D. Tech-Mechanical Engineering VR10 D. Tech-Mechanical Engineering VR10 D. Tech-Mechanical Enginee
VR17 03 B. Tech-Mechanical Engineering VR17 03 B.Tech-Mechanical Engineering VR17 03 CAE Lab CO2 transfer mode.
VR17 03 B.Tech-Mechanical Engineering VR18 04 B.Tech-Mechanical Engineering VR19 05 B.Tech-Mechanical Engine

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	VR17	03	B.Tech-Mechanical Engineering			COI	Understanding basic purpose of profession, professional ethics and various moral and social issues
50	VR17	03	B.Tech-Mechanical Engineering		INDUSTRY ORIENTED MINI PROJECT		Acquiring knowledge of various roles of Enbgineer in applying ethical principles at various
58			B.Tech-Mechanical	1003173241		CO2	professional levels Awareness of professional rights and
	VR17	03	Engineering			CO3	responsibilities of an Engineer, safety and risk benefit analysis of an Engineer
	VR17	03	B.Tech-Mechanical Engineering			CO4	Excelling in competitive and challenging environment to contribute to industrial growth
	VR17	03	B.Tech-Mechanical Engineering	1003174101		COI	Describe basic structure of CAD workstation, memory types, input-output devices and computer graphics
59	VR17	03	B.Tech-Mechanical Engineering		CAD/CAM		Apply knowledge of mathematical concepts to geometry manipulation, modelling of curves,
	VR17	03	B.Tech-Mechanical			CO2	surfaces and solids Write a programs for NC operations using various
	VR17	03	Engineering B.Tech-Mechanical			CO3	methods available Apply the principles of GT, CAPP and CAQC to
	1111		Engineering B.Tech-Mechanical			CO4	optimizing factory layouts and operations Understand the lay-out of an automobile
	VR17	03	Engineering	1003174102	Automobile Engineering	COI	components and features of supercharging turbo- charging with crank case ventilation
60	VR17	03	B.Tech-Mechanical				Build the principles and working of various
60	VR17	03	Engineering B.Tech-Mechanical			CO2	components in transmission system of automobile Distinguish the steering, suspension
			Engineering B.Tech-Mechanical			CO3	system, electrical and safety systems operation Explain the various emisson control systems and
	VR17	03	Engineering			CO4	automobile sevice
	VR17	03	B.Tech-Mechanical Engineering			COI	Understand the working principle of steam power plant.
	VR17	03	B.Tech-Mechanical Engineering		, n	CO2	Illustrate the working of various power plants.
61	VR17	03	B.Tech-Mechanical Engineering	1003174103	Power Plant Engineering	CO3	Evaluate the performance of power plants theoritically.
·	VR17	03	B.Tech-Mechanical Engineering				Analyze the economical feasibility of power plant and utilize the electrical, instrumentation &
\vdash	VR17	03	B.Tech-Mechanical	1003174104	Fundamentals of Acoustics & Vibration	CO4	pollution control systems used in power plant Differentiate between various terms in acoustics
	VR17	03	Engineering B.Tech-Mechanical			CO1	and vibrations
62			Engineering B.Tech-Mechanical			CO2	Analyse various degrees of systems in vibrations Define the mode shapes pattern encountered in day
	VRI7	03	Engineering B.Tech-Mechanical			_CO3	to day applications Relate noise control methods by measurement
	VR17	03	Engineering			CO4	techniques
	VR17	03	B.Tech-Mechanical Engineering	1003174105	Optimization and Reliability	COI	Understand and comprehend the concepts of optimization and develop problem equation for a given scenario
63	VR17	03	B.Tech-Mechanical Engineering			CO2	Apply, solve an engineering problem from a numerical point of view
	VR17	03	B.Tech-Mechanical Engineering				Write programming methods to solve a engineering
	VR17	03	B.Tech-Mechanical			CO3	Develop a problem formulation for a cantilever
-	VR17	03	Engineering B.Tech-Mechanical	:		CO4	beam problem, and solve it Understandthe various air refrigeration cycles and
			Engineering B.Tech-Mechanical	-		COI	their analysis. Illustrate the performance improvement methods in
64	VR17	03	Engineering		Refrigeration &	CO2	VCR systems.
04	VR17	03	B.Tech-Mechanical Engineering	1003174106	Air Conditioning	CO3	Outline the refrigerant characteristics & components of the VCR system.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Apply the working principles of vapour absorption & Discuss the various non-conventional methods of refrigeration.
	VR17	03	B.Tech-Mechanical Engineering			COI	
	VR17	03	B.Tech-Mechanical	1			Understand density variation in fluid motion. Identify isoentropic flow and analyze the ideal
l			Engineering	j	Gas Dynamics	CO2	behavior of gases in one dimensional.

65	VR17	03	B.Tech-Mechanical	1003174107	& Jet		
	VRI		Engineering		Propulsion		Analyze gas flows with and without friction. Analyze gas flows with and without heat and
	VR17	03	B.Tech-Mechanical Engineering				describe jet propulsion engines and basic concepts of rocket propulsion.
	VR17	03	B.Tech-Mechanical Engineering				Describe the features of numerical control and computer numerical control machine tools
İ	VR17	03	B.Tech-Mechanical Engineering		CNC Machine	CO2	Develop the numerical control and computer aided part programming
66	VR17	03	B.Tech-Mechanical Engineering	1003174108	Tools	CO3	Distinguish the interpolators for linear and circular interpolation
	VR17	03	B.Tech-Mechanical Engineering			CO4	Analyse the tooling systems for computer numerical control machines
	VR17	03	B.Tech-Mechanical Engineering			COI	Understand the concepts of quality and the fundamentals of science of quality engineering
	VR17	03	B.Tech-Mechanical Engineering			CO2	Draw and construct control charts
67	VR17	03	B.Tech-Mechanical Engineering	1003174109	Quality and Reliability	CO3	Infer from sampling plans and determine the quality parameter levels
	VR17	03	B.Tech-Mechanical Engineering		Engineering		Define a house of quality for a given scenario and comprehend the concept of reliability with a significant emphasis on a design of a given
	VR17	03	B.Tech-Mechanical Engineering			CO4	component Understand the concept of composites, can differentiate MMC's, PMS's, CMC's, able to tell
68	VR17	03	B.Tech-Mechanical	1003174110	Composite	CO1	the available reinforcing materials and their uses. Differentiate different types of reinforcement's,
	VR17	03	Engineering B.Tech-Mechanical		Materials	CO2	matrix materials, and use of coupling agents Explain different fabrication techniques to
	VR17	03	Engineering B.Tech-Mechanical			CO3	fabricate composite materials Evaluate different failure theories and applications
	VR17	03	Engineering B.Tech-Mechanical Engineering	1003174111	Condition Monitoring	CO4	of different composite material. Understand the basic vibration problems and develop mathematical models using Mass, spring and damper concepts.
	VR17	03	B.Tech-Mechanical Engineering			CO2	Apply the different methods for measuring and vibrations.
69	VR17	03	B.Tech-Mechanical Engineering			CO3	Explain the core concepts of viewing, clipping, parametric curves and spot lighting.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Articulate the concepts of fault diagnosis of machines using Ultrasonic monitoring techniques.
	VR17	03	B.Tech-Mechanical Engineering			CO1	Estimate errors using various computational methods.
	VR17	03	B.Tech-Mechanical Engineering	1003174112	Computational Fluid Dynamics	CO2	Apply various numerical techniques to solve PDE's associated with governing equations applied in various engineering problems
70	VR17	03	B.Tech-Mechanical Engineering				Explain momentum, energy, conservation laws and principles that are applied to conduction and convection problems using FDM approach.
	VR17	03	B.Tech-Mechanical			CO3	Evalute various fluid flow and heat transfer problems using Finite volume approach.
	VR17	03	Engineering B.Tech-Mechanical				Distinguish various types of solar thermal collectors
	VR17	03	Engineering B.Tech-Mechanical	1	Const	COI	Describe the working of a photovoltaic system and
71	VR17	03	Engineering B.Tech-Mechanical	1003174113		CO2	wind energy conversion system Analyze the operation of fuel cells and biomass
	VR17	03	B.Tech-Mechanical Engineering	-	Systems	CO3	conversion technologies Elaborate on ocean, geothermal, electrical,mechanical systems and Utilize concept
	VRI7	03	B.Tech-Mechanical			CO4	of green building and energy management Identify the principles and commonly used
	VR17	-	Engineering B.Tech-Mechanical Engineering	-		CO1	paradigms and techniques of computer graphics Apply mathematics and logic to develop compute programs for elementary graphics operations
72	VR17	03	B.Tech-Mechanical Engineering	1003174114	Computer Graphics	CO3	Explain the core concepts of viewing, clipping, parametric curves and spot lighting

٦				1	Г		Articulate the concepts of 3D transformations,
ļ	VR17	03	B.Tech-Mechanical				hidden surface elimination and Execute basic
	*****	Ç	Engineering			CO4	graphics application programs including animation
			B.Tech-Mechanical				Choose a suitable liquid based Rapid prototyping
	VR17	03	Engineering		j	CO1	process based on the application of the product.
ı			B.Tech-Mechanical				Select solid based Rapid prototyping process based
	VR17	03	Engineering		Additive	CO2	on the application of the product.
73			B.Tech-Mechanical	1003174115	Manufacturing		Compare and contrast between the SLS and 3DP
	VR17	03	Engineering			CO3	rapid prototyping processes
i	1/0.10	0.2	B.Tech-Mechanical				Explain a rapid tooling process based on the
	VR17	03	Engineering			CO4	specific requirement of a component
	1/0.17	02	B.Tech-Mechanical		'		Draw two dimensional views of any mechanical
	VR17	03	Engineering			CO1	component
[VR17	03	B.Tech-Mechanical				
74	VKI	UJ	Engineering	1003174121	CAD/CAM Lab	CO2	using Auto CAD software.
\	VR17	03	B.Tech-Mechanical	1003174121	CAD/CAM Lab		Create three dimensional part models and
	VK17	US	Engineering			CO3	assemblies of
	VR17	03	B.Tech-Mechanical				
	VICI7	0,5	Engineering			CO4	machine components using Solidworks software.
	VR17	03	B.Tech-Mechanical				Understand the natural frequency of a different
	77(17		Engineering			COI	beams.
75	VR17	03	B.Tech-Mechanical				Apply the concepts of hammer and accelerometer
	7107		Engineering	1003174122	Vibration and	CO2	method to determine the free vibrations.
	VR17	03	B.Tech-Mechanical		Acoustics Lab		Evaluate the effect of damping with various
			Engineering			CO3	materials.
	VR 17	03	B.Tech-Mechanical				Determine the structural vibrations of a given
	1007		Engineering			CO4	objects.
1	VR17	03	B.Tech-Mechanical				Understand the Graphing-Functions of one
			Engineering			CO1	variable and two variables
'	VR17	03	B.Tech-Mechanical		Simulation		Creating simple plots, Adding titles, axis labels,
76			Engineering	1003174123	Lab(Mat-Lab	CO2	and annotations
	VR17	03	B.Tech-Mechanical		Tools)	002	
			Engineering			CO3	Evaluate the array operations and Linear equations
	VR17	03	B.Tech-Mechanical			604	Determine the sector of second
			Engineering B.Tech-Mechanical	i	-	CO4	Determine the control flow and operators. Write PLC programs for control of traffic lights,
	VR17	03				COI	water level, lifts and conveyor belts
	-		Engineering B.Tech-Mechanical				Analyze and simulate PID controllers for a
	VR17	03	Engineering	1003174124	Mechatronics Lab	CO2	physical system using MATLAB
77			B.Tech-Mechanical			- 002	Develop pneumatic and hydraulic circuits using
	VR17	03	Engineering			CO3	Automaton studio
			B.Tech-Mechanical				Design of components using design of synthesis
	VR17	03	Engineering			CO4	principles
						-	Acquire the manufacturing knowledge on utilizing
	VR17	03	B.Tech-Mechanical			COI	practical facilities for
	VR17		Engineering	ŀ			development of mechanical synthesis project.
			55.36.5.5	1003174131			Design the links and assembly drawing of
		03	B.Tech-Mechanical			-	mechanism in the form of orthographic
			Engineering		Mechanical Synthesis	CO2	drawing with dimensioning
78			D Track Machanical				Relate the various components, study and record
	VR17	03	B.Tech-Mechanical	1	Project	CO3	the output of equipment with
			Engineering				theoretical design values for validation
				1			Apply the effective manufacturing, thermal and
	VR17	03	B.Tech-Mechanical	1			design process with proper
	1 1111	03	Engineering				material, technical procedure of planning the work
	_					CO4	in the industry/workshop
			B.Tech-Mechanical				Understand the basics of workflow and becomes
1	VR17	03	Engineering				well acquainted with line balancing and mixed
			Ziigineering	1		COL	model production theories.
1	1.		B.Tech-Mechanical		Production		Comprehend the concepts of demand forecasting
79	VR17	03	Engineering	1003174201	1		and the quantitative methods to meet the market
1					Control	CO2	demand.
	VR17	03	B.Tech-Mechanical		05.1401		
	1	"	Engineering			CO3	Differentiate EOQ, ABC and VED models.
	-	I	B.Tech-Mechanical				Apply the concepts of demand, supply to the
	VR17	1 03		'		1 CO4	I have diversite and a market and another than the diversity of the diversity of
	VR17	03	Engineering	ļ		CO4	production planning across all industries.
						C04	Understand the properties of constituents,
	VR17		Engineering B.Tech-Mechanical Engineering			CO4	

	VRI7	03	B.Tech-Mechanical		Advanced		Categorize and process of different PMC, MMC &
80	-		Engineering B.Tech-Mechanical	1003174202	Materials -	CO2	CCC with their applications
	VR17	03	Engineering			CO3	Compute micromechanical analysis of Lamina.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Differentiate the smart materials, Nano materials in comparison with bulk materials.
			B.Tech-Mechanical				Discuss the fundamental principles of
	VR17	03	Engineering				nanotechnology and their application to biomedical
			B.Tech-Mechanical		· •	COI	Apply engineering and physics concepts to the
	VR17	03	Engineering			CO2	nano-scale and non-continuum domain.
81		0.0	B.Tech-Mechanical	1003174203	Nano-		choose appropriate synthesis technique to
	VR17	03	Engineering		Technology	CO3	synthesize quantum nanostructures of desired size, shape and surface properties
							Evaluate state-of-the-art, characterization methods
	VR17	03	B.Tech-Mechanical				for nanomaterials, and determine nanomaterial
			Engineering			CO4	safety and handling methods required during characterization.
	VR17	03	B.Tech-Mechanical			004	Understand the principles of desigining for
	VKI	0.5	Engineering			COI	manufacturability and economic production
	VR17	03	B.Tech-Mechanical Engineering		Thermal	CO2	Apply design rules to make machining easier, clean and honest
82	1/0.17	0.7	B.Tech-Mechanical	1003174204	Equipment	CO2	Relate the general design considerations for casting
	VR17	03	Engineering		Design	CO3	and casting tolerances
	VR17	03	B.Tech-Mechanical			GO.4	Define the various design principles in forming
_			Engineering			CO4	techniques of manufacturing Understand the basic need for fire and safety
	VR17	03	B.Tech-Mechanical Engineering				requirements in any given setting like kitchen,
						COI	manufacturing unit, petrol bunk
83	VR17	03	B.Tech-Mechanical Engineering	1003174205	Industrial fire	CO2	Identify the safety equipment needed for a given setting like a testing laboratory
	VR17	03	B.Tech-Mechanical	1003111203	and Safety	- 002	Explain the history, background, and the purpose
	VKI7		Engineering			CO3	of making the laws from a safety standpoint.
	VR17	03	B.Tech-Mechanical Engineering			CO4	Relatethe variety of fire equipment and understand their need/use for a given problem
_	VR17	03	B.Tech-Mechanical				Identification of different sensors, transducers,
	VKI		Engineering			CO1	signal conditioning techniques
	VR17	03	B.Tech-Mechanical				Understanding and designing mechatronic motion logic control system and the key elements in its
84			Engineering	1002124206	Machanaia	CO2	design
04			B.Tech-Mechanical	1003174206	Mechatronics		Develop a PLC programming techniques with
	VR17	03	Engineering			CO3	Microprocessor, ladder diagram for different logic Gates
Į	VR17	03	B.Tech-Mechanical	1		003	Understanding image fundamentals and
<u> </u>	VKLI	03	Engineering			CO4	Implementation of Micro Mechatronics System
	VR17	03	B.Tech-Mechanical Engineering			CO1	Understand the principles of designiing for manufacturability and economic production
	VR17		B.Tech-Mechanical			- 01	Apply design rules to make machining easier,
85	VRI7	03	Engineering	1003174207	Design for	CO2	clean and honest
1	VR17	03	B.Tech-Mechanical Engineering		Manufacture	CO3	Relate the general design considerations for casting and casting tolerances
	VD17	0.2	B.Tech-Mechanical	1			Define the various design principles in forming
<u></u>	VR17	03	Engineering			CO4	techniques of manufacturing
	VR17	03	B.Tech-Mechanical				Design and analyze the surface finish and material
	*KI/	CO	Engineering			COL	removal in electro chemical grinding and electro chemical machining
ļ			B.Tech-Mechanical	1			Estimate the material removal rate and effect of
	VR17	03	Engineering		Un		process parameters in EDM, EDG and wire cut
86				1003174208	Conventional	CO2	EDM process Analyze the material removal rate in Electron
""	VR17	03	B.Tech-Mechanical	1005174200	Machining		Beam Machining and Laser Beam Machining
	*K1/	(,)	Engineering		Processes		processes and identify the effect of process
				-		CO3	parameters. Analyze the material removal rate in Electron
	VR17	03	B.Tech-Mechanical				Dschargeiacharge with the effect of process
_			Engineering			CO4	parameters.
	VR17	03	B.Tech-Mechanical				Understand the basic concept of Radiography
			Engineering B.Tech-Mechanical	-		COI	testing technique. Relate the ultrasonic testing method in various
1	VR17	03	Engineering			CO2	applications with other methods.

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87	,,,,,,	0.2	B.Tech-Mechanical	1003174209	Non-Destructive		Compare the liquid penetrant, eddy current,
	VR17	03	Engineering		Evaluation		magnetic particle testing methods and discuss the
			Zingilitetting			CO3	advantages and shortcomings
			B.Tech-Mechanical		ĺ		Discuss the active and passive techniques in
	VR17	03	Engineering				Infrared and thermal testing along with industrial
			Engineering			CO4	applications
							Understand the need of optimum design of a
	VR17	03	B.Tech-Mechanical				mechanical component or an assembly and Study
	* 13.7		Engineering				the procedure to bring cost effective manufacturing
				ļ i			process with proper material selection and
88				1003174231	Mai- D-i	COI	technical procedure of planning the work.
00	VR17	03	B.Tech-Mechanical	1003174231	Main Project		Recognize the need of scheduling and realizing an
	[VK1/	U.S	Engineering			CO2	engineering product design.
	VR17	0.7	B.Tech-Mechanical				Realize the significance of real time applications,
	VKI/	03	Engineering			CO3	energy management and environmental affects.
	VR17	03	B.Tech-Mechanical		l		Obtain the skill of data collection and technical
	VR17	0.3	Engineering			CO4	report writing.
	VR17	02	B.Tech-Mechanical		-		Construct the in depth knowledge about the
	VKI/	03	Engineering			COI	courses of interest of student
	VR17	02	B.Tech-Mechanical		1		Demonstrate about various advanced sources of
89		03	Engineering		Technical	CO2	knowledge.
89	VR17	02	B.Tech-Mechanical	1003174251	Seminar		Develop communication skills through presentation
	VR17	03	Engineering			CO3	before a team of experts
	VP 17	02	B.Tech-Mechanical				Understand the various courses of student in all the
	VR17	03	Engineering			CO4	semesters
							Understand the reasons in which courses the
	VR17	03	B.Tech-Mechanical				student is interested/not intrested Test the student
		0.5	Engineering				ability about the courses of study in the entire
			1			COL	programme
90	VR17	02	B.Tech-Mechanical	1003134061	Comprehensive Exam		Discus on any topic from the overall courses of the
90	VKI	03	Engineering	1003174261		CO2	under graduate level program.
	VR17	03	B.Tech-Mechanical	1			Identify need of optimum design of a mechanical
	VRI	0.5	Engineering			CO3	component or an assembly
	1/0.17	0.2	B.Tech-Mechanical				Evaluate student knowledge on the courses of
	VR17	03	Engineering			CO4	study
	VR17	0.2	B.Tech-Mechanical				Analyze the entrepreneurship design and the
	VK1/	03	Engineering			COI	business environment
	VR17	03	B.Tech-Mechanical	1			
91	VKI/	0.3	Engineering			CO2	Difine industrial policies
ا کا	VD12	0.3	B.Tech-Mechanical	1003174281	Internship		posterior poster
	VR17	03	Engineering			CO3	Explain the business preparation
	VP17	0.3	B.Tech-Mechanical	1			Integrate the knowledge of various courses and
	VR17	03	Engineering			CO4	their applications in industry
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			B.Tech.		nd Computer I	Engineer	ring
S.No	Regulatio n	Programm e Code	Programme Name	Course Code	Course Name	СО	Course Outcome: After the completion of the course student will be able to
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Enhance English Language by relating the ideas of eminent personalities.
	VR17	19	B.Tech-Electronics and Computer Engineering			CO2	Articulate the technological advancements fluently.
i	VR17	19	B.Tech-Electronics and Computer Engineering	1000171101	English-1	CO3	Inculcate the art of thinking and writing clearly and logically.
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Enact various themes through team work and learn
	VR17	19	B.Tech-Electronics and			CO1	the usage of vocabulary through humourous texts. Solve the first and higher order linear differential
	VR17	19	B.Tech-Electronics and		Farinasian	CO2	equations. Estimate extrema and series expansions of
2	VR17	19	Computer Engineering B.Tech-Electronics and	1000171102	Engineering Mathematics-I	CO3	functions of several variables. Interpret area and volume using double integral and
	VR17	19	Computer Engineering B.Tech-Electronics and			CO4	triple integral. Evaluate of solution of Ordinary differential
 	VR17	19	B.Tech-Electronics and			COI	equations by using Laplace Transform technique. Estimate numerical solution of non Linear equation.
	VR17	19	Computer Engineering B.Tech-Electronics and			CO2	Construct Interpolating polynomial for the given
3	VR17	19	Computer Engineering B.Tech-Electronics and	1000171103	Engineering Mathematics-II	CO3	data. Calculate Numerical Solution of ODE and
			Computer Engineering B.Tech-Electronics and			CO4	Numerical Integration. Evaluate Fourier series and Fourier transforms for
	VR17	19	Computer Engineering B.Tech-Electronics and				functions.
	VRI7	19	Computer Engineering B.Tech-Electronics and		_	CO1	Write compile and debug Programs in C language
4	VR17	19	Computer Engineering B.Tech-Electronics and	1000171105	Computer Programming	CO2	Use operators, data types and write programs
	VR17	19	Computer Engineering B.Tech-Electronics and		using C	CO3	Select the best loop construct for a given problem
	VR17	19	Computer Engineering B.Tech-Electronics and			CO4	Design and implement C programs
	VR17	19	Computer Engineering			CO1	Understand the use of drawing instruments to construct the polygons and curves
5	VR17	19	B.Tech-Electronics and Computer Engineering	1000171106	Engineering	CO2	Learn the principle of orthographic projections. Draw Orthographic projections of points, lines.
	VR17	19	B.Tech-Electronics and Computer Engineering		Drawing	CO3	Draw the various types of planes and solids its views in different Positions
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Draw isometric views of simple objects
	VR17	19	B.Tech-Electronics and Computer Engineering			CO1	Identify different polymers and their Engineering applications.
6	VR17	19	B.Tech-Electronics and Computer Engineering	1000171111	Applied	CO2	Desribe various renwable and non-renwable energy resources.
"	VR17	19	B.Tech-Electronics and Computer Engineering	1000171111	chemistry	CO3	Aquire the knoweldge of mechanism and principles measures of corrosion.
	VRI7	19	B.Tech-Electronics and Computer Engineering			CO4	Illustrate green Synthesis, semi conductors, super conductors and their applications in industry.
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Apply the usage of phonemes while referring to the dictionary
	VR17	19	B.Tech-Electronics and Computer Engineering		English - Communication	CO2	Articulate with others by using proper functions.
7	VR17	19	B.Tech-Electronics and Computer Engineering	1	Skills Laboratory		Enact the roles with proper body language.
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Communicate fluently with proper pronunciation
	VR17	19	B.Tech-Electronics and	1		COI	Understand the basic components and peripherals of a computer.
	VR17	19	B.Tech-Electronics and			CO2	To become familiar in configuring a system.
8	VR17	19	B.Tech-Electronics and	1000171124	IT Workshop	CO3	Learn the usage of productivity tools.
	VR17	19	B.Tech-Electronics and	-		CO4	Acquire knowledge about the netiquette and cyber
\vdash	VR17	19	Computer Engineering B.Tech-Electronics and			COI	Understand C programming development
		-	Computer Engineering B.Tech-Electronics and	T)	Computer		Analyzing the complexity of problems, Modularize
"	VR17	19	Computer Engineering		Computer	CO2	the problems into small modules and then convert

· 7			B.Tech-Electronics and	1000171120	r rogramming	1	Understand and apply the in-built functions and
Ĺ	VR17	19	Computer Engineering	1	Laboratory		customized functions for solving the problems.
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Understand and apply the pointers, memory allocation techniques and use of files for dealing
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Develop communication skills by inferring the technological advancements.
	VR17	19	B.Tech-Electronics and Computer Engineering			CO2	Identify the life of eminent personalities.
10	VR17	19	B.Tech-Electronics and Computer Engineering	1000171201	English- II	CO3	Relate the importance of Environment and its sustainability to language learning
	VR17	19	B.Tech-Electronics and		İ	CO4	Create the art of writing by applying apt vocabulary
	VR17	19	B.Tech-Electronics and			COL	and grammar. Solve simultaneous linear equations numerically
	VR17	19	Computer Engineering B.Tech-Electronics and		ŀ	CO2	using rank of a matrix and also Eigen values and Identify and solve partial differential equations.
11			Computer Engineering B.Tech-Electronics and	1000171203	Engineering Mathematics-III	CO3	Calculate gradient of a scalar function, divergence
	VRI7	19	Computer Engineering B.Tech-Electronics and		-		and curl of a vector function. Evaluate line, surface and volume integrals using
	VR17	19	Computer Engineering B.Tech-Electronics and			CO4	appropriate integral theorems. Describe the wave phenomena of light and working
	VR17	19	Computer Engineering B.Tech-Electronics and			COI	principle of optical instruments. Apply the knowledge of basic quantum mechanics
12	VR17	19	Computer Engineering	1000171207	Applied physics	CO2	to understand wave equation.
	VR17	19	B.Tech-Electronics and Computer Engineering			CO3	Understanding the basic knowledge of free electon theory of materials.
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Make use of the basic concepts of energy bands in crystalline solids to understand semiconductor
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Will analyze the RLC circuit's behavior in detailed.
	VR17	19	B.Tech-Electronics and Computer Engineering		Network	CO2	Analyze the performance of periodic waveforms.
13	VR17	19	B.Tech-Electronics and Computer Engineering	1000171209	Analysis	CO3	Gain the knowledge in characteristics of two port network parameters (Z, Y, ABCD, h &g).
	VR17	19	B.Tech-Electronics and			CO4	Analyze the filter design concepts in real world
	VR17	19	B.Tech-Electronics and			CO1	applications. Elucidate the natural resource & their importance
	VR17	19	Computer Engineering B.Tech-Electronics and			CO2	for the sustenance of life and recognises the need to Gives the broad view on the various attributes of
14			Computer Engineering B.Tech-Electronics and	1000171212	Environmental Studies	CO3	pollution & and their impact & measure to reduce Debates on social issues both rural and urban
	VR17	19	Computer Engineering B.Tech-Electronics and				environment possible means to combat the Educates about Environmental Impact Assessment,
<u> </u>	VR17	19	Computer Engineering B.Tech-Electronics and			CO4	Environmental Impact Statement & Environmental Apply advanced data structure strategies for
	VRI7	19	Computer Engineering B.Tech-Electronics and			CO1	exploring complex data structures.
15	VR17	19	Computer Engineering	1000171213	Data Structures	CO2	Compare and contrast various data structures and design techniques in the area of performance
	VR17	19	B.Tech-Electronics and Computer Engineering			CO3	Implement all data structures like stacks, queues, trees, lists and graphs and compare their
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Develop programs by nonlinear data structures such as tree and graphs
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Apply the usage of phonemes while referring to the dictionary
	VR17	19	B.Tech-Electronics and Computer Engineering	1	English	CO2	Articulate with others by using proper functions.
16	VR17	19	B.Tech-Electronics and		Communication Skills Lab-2	CO3	Enact the roles with proper body language.
	VR17	19	B.Tech-Electronics and			CO4	Communicate fluently with proper pronunciation
	VR17	19	Computer Engineering B.Tech-Electronics and	1		COI	Experimentation of laws of vibrations in
		1	Computer Engineering B.Tech-Electronics and		Fii	<u> </u>	strenteched string Determination of velocity of sound, rigidity
17	VR17	19	Computer Engineering B.Tech-Electronics and	1000171222		CO2	modulus of a wire, acceleration due to gravity,
	VR17	19	Computer Engineering		Laboratory	CO3	Zener diode and temperature vs. resistance Demonstration of formation Newton's rings,
	VR17	19	B.Tech-Electronics and Computer Engineering	<u> </u>		CO4	diffraction pattern using grating and induced
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Develope searching and sorting techniques
	VR17	19	B.Tech-Electronics and Computer Engineering	1	Data Structures	CO2	Implement single,double and circular linked lists
18	VR17	19	B.Tech-Electronics and Computer Engineering	7 10001/1220	Programming Lab	CO3	Implement stacks and queues using arrays and linked lists
- 1	<u> </u>	<u> </u>	1 Computer Engineering	_	I		Inner nata

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	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Delop programs by nonlinear data structures such as tree and graphs
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Explain the basic concepts of semiconductor physics and summarize the characteristics of PN
	VR17	19	B.Tech-Electronics and		1	CO2	Compare the construction, working principle of
ا ۱٫٫۱			Computer Engineering	1004170101	Electronic		rectifiers, with and without filters with relevant Evaluate the construction, principle of operation of
19	VR17	19	B.Tech-Electronics and Computer Engineering	1004172101	Devices and Circuits	CO3	transistors, BJT and FET with their V-I
			B.Tech-Electronics and		-		characteristics in different configurations and Eestimate the stabilization concepts with
	VR17	19	Computer Engineering			CO4	expressions and perform the analysis of small signal low frequency transistor amplifier circuits using
	VR17	19	B.Tech-Electronics and			COI	Convert numeric information in different Number
			Computer Engineering B.Tech-Electronics and				systems. Solve the simple Boolean expressions using the
20	VR17	19	Computer Engineering	1004172102	Switching Theory and	CO2	theorems and postulates of Boolean algebra and to
	VR17	19	B.Tech-Electronics and Computer Engineering		Logic Design	CO3	Design and analyze small combinational circuits and to use standard combinational
	VR17	19	B.Tech-Electronics and			CO4	Design and implement small sequential circuits and
	VRI7	19	Computer Engineering B.Tech-Electronics and			COI	devices and to use standard sequential Analyze the different signals spectral
			Computer Engineering B.Tech-Electronics and				characteristics of continuous-time periodic and a Explain the process of sampling and the effects of
21	VR17	19	Computer Engineering	1004172103	Signals and	CO2	under sampling, over sampling.
	VR17	19	B.Tech-Electronics and Computer Engineering		Systems	CO3	Evaluatae convolution both in time domain and frequency domain.
	VR17	19	B.Tech-Electronics and			CO4	Interpret the Laplace transform and Z- transform for
	VR17	19	Computer Engineering B.Tech-Electronics and			COI	analysis of continuous-time and discrete-time Articulate the phases of SDLC from requirement
			Computer Engineering B.Tech-Electronics and				gathering phase to design phase Apply the appropriate process models for the
22	VR17	19	Computer Engineering	1012172104	Software	CO2	development of SDLC
	VRI7	19	B.Tech-Electronics and Computer Engineering		Engineering	CO3	Design a prototype for a software design and user interface & apply strategies of coding & testing for
'	VR17	19	B.Tech-Electronics and			CO4	Apply the knowledge about estimation and
	VR17	19	B.Tech-Electronics and			COI	maintenance of software systems and modeling the Apply the basic terminology of C++.
			Computer Engineering B.Tech-Electronics and				Analyze programs in C++ language and use
23	VR17	19	Computer Engineering	1019172105	Object Oriented	CO2	different data types in a computer program. Design
	VR17	19	B.Tech-Electronics and Computer Engineering		Programming	CO3	Explaining with classes, objects and member functions, concepts of inheritance. Define and
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Design the concepts of overloading of functions and operators, overriding and exception handling
	VDIS	10	B.Tech-Electronics and				Describe the economic activities performed by the
	VR17	19	Computer Engineering			COI	businessmen in the business for profit earning. Understand the significance of demand, its
	VR17	19	B.Tech-Electronics and Computer Engineering		Managerial	CO2	Evaluate the production theories and pricing policies of various enterprises.
24				1099172106	Economics & Financial		Design and implement different structures of
	VRI7	19	B.Tech-Electronics and Computer Engineering		Analysis	CO3	market covering how price is determined under different market structures. Also can able to take
		 				<u> </u>	decisions using business cycles. Analyze different
L	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Able to prepare financial statements. Evaluate investment proposals using capital budgeting tools
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Determine the V-I characteristics of zener diode, PN junction diode and its applications such as Haif
1	VR17	19	B.Tech-Electronics and	1	Electronic	CO2	Analyze the Input and Output characteristics of
25			Computer Engineering B.Tech-Electronics and	1004172121	Devices and		BJT in CE, CC configurations and design the CE Estimate the characteristics of FET & design the
	VR17	19	Computer Engineering	_	Circuits Lab	CO3	CS amplifier.
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Examine the characteristics of SCR and UJT.
	VR17	19	B.Tech-Electronics and Computer Engineering			CO1	Understand the process of writing, compiling and
	VR17	19	B.Tech-Electronics and			CO2	executing programs in C++ using appropriate Implement the object oriented concepts in
26			Computer Engineering B.Tech-Electronics and	1019172122	OOPS Lab		developing application using C++. Developing applications in C++ using the
	VR17	19	Computer Engineering		2.0	CO3	understanding of Inheritance and polymorphism.
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Evaluate the use of exception handling while developing a C++ application.
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Recognize importance of human values, harmony and ethical behavior in real life situations
	VR17	19	B.Tech-Electronics and		professional	CO2	Describe the core values that shape the ethical
77	T 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	17	Computer Engineering	1000177102			behaviour of an engineer

	VRI7	19	B.Tech-Electronics and	1077176103	Summer and base	602	Recall basics of professional ethics and human
-	VKI7	19	Computer Engineering		human values	(03	values.
	VR17	19	B.Tech-Electronics and Computer Engineering	_			Listing sustained happiness through identifying the essentials of human values and skills.
	VR17	19	B.Tech-Electronics and Computer Engineering			CO1	Understand the basic principle of communication system
. [VR17	19	B.Tech-Electronics and Computer Engineering		PRINCIPLES OF	CO2	Describe the principles of Analog and Digital modulation techniques and be able to analyze their
28	VR17	19	B.Tech-Electronics and Computer Engineering	1019172201	COMMUNICAT	CO3	Explain the various communication system parameters for different types of modulation and
	VR17	19	B.Tech-Electronics and Computer Engineering		10113	CO4	Distinguish various Analog and Digital modulation
\dashv	VR17	19	B.Tech-Electronics and			CO1	techniques. Understand the concepts of feedback and its
-	VR17	19	Computer Engineering B.Tech-Electronics and		-	CO2	advantages to various control systems Analyze the transfer function characteristics of the
29	VR17	19	Computer Engineering B.Tech-Electronics and	1004172202	CONTROL SYSTEMS	CO3	given different order system and introducing Applying different approaches for absolute stability
	VR17	19	Computer Engineering B.Tech-Electronics and		}	CO4	and relative stability criteria. Evaluating the system performance in non zero
_			Computer Engineering B.Tech-Electronics and				input conditions. Define management and its nature scope and
	VRI7	19	Computer Engineering B.Tech-Electronics and			COI	functions and hierarchical levels and organizational Illustrate various functions of production and
30	VR17	19	Computer Engineering B.Tech-Electronics and	1099172203	MANAGEMEN T SCIENCE	CO2	inventory management Determine the various Analyze the process of matching manager
	VR17	19	Computer Engineering B.Tech-Electronics and		, seither	CO3	qualifications with position requirements and
	VR17	19	Computer Engineering			CO4	Compare the various contemporary issues of management
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Analyze the Performance of a computer using performance equation
31	VR17	19	B.Tech-Electronics and Computer Engineering	1005172204	COMPUTER ORGANIZATIO	CO2	Understand the different instruction types and calculate the effective address of an CO2 operand
	VRI7	19	B.Tech-Electronics and Computer Engineering	1003172204	N N	CO3	Demonstrate how a computer performs micro arithmetic operation.
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Evaluate how the data transfer takes place using I/O mode, Interrupt, and DMA techniques with
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Design linear and non-linear wave shaping circuits
	VR17	19	B.Tech-Electronics and Computer Engineering		PULSE AND	CO2	Analyse various wave shaping circuits and signal generating circuits
32	VR17	19	B.Tech-Electronics and Computer Engineering	1004172205	DIGITAL CIRCUITS	CO3	Examine the difference between multi vibrators and time base generators
	VR17	19	B.Tech-Electronics and			CO4	Evaluate different non sinusoidal signals generators
H	VR17	19	B.Tech-Electronics and			COI	Apply the appropriate process models for the
	VRI7	19	Computer Engineering B.Tech-Electronics and			CO2	application development of SDLC Understand the phases of SDLC from requirement
33	VR17		Computer Engineering B.Tech-Electronics and	1005172206	OPERATING SYSTEMS		gathering phase to design phase CO2 via Analysis Analyzing the strategies for coding and testing
		19	Computer Engineering B.Tech-Electronics and			CO3	phase in Software product CO3 development Apply the knowledge about estimation and
	VR17	19	Computer Engineering B.Tech-Electronics and			CO4	maintenance of software systems and CO4
	VR17	19	Computer Engineering B.Tech-Electronics and		PULSE	COI	Generation of sinusoidal and non-sinusoidal signals
34	VR17	19	Computer Engineering	1019172221	&DIGITAL CIRCUITS &	CO2	Analysis and design of various multivibrators circuits.
	VR17	19	B.Tech-Electronics and Computer Engineering		COMMUNICAT IONS LAB	CO3	Demonstrate the UIT relaxation oscillator and boot- strap sweep circuits.
	VR17	19	B.Tech-Electronics and Computer Engineering		10110 2010	CO4	Process of converting analog signal to digital signal via sampling, quantization, and coding.
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Explain different problems related to process synchronization.
	VR17	19	B.Tech-Electronics and Computer Engineering]	OPERATING	CO2	Apply deadlock prevention and deadlock detection algorithms
35	VR17	19	B.Tech-Electronics and Computer Engineering	1019172222	SYSTEMS LAB	CO3	Describe the concepts of paging and segmentation for memory management.
	VR17	19	B.Tech-Electronics and Computer Engineering	1		CO4	Describe different disk space allocation methods
	VR17	19	B.Tech-Electronics and			COI	and free space management techniques To create an Industrial environment and culture
	1100	15	B.Tech-Electronics and	-			within the institution. To provide students hands on experience on,
1	VR17	19	Computer Engineering		INDUSTRIAL	CO2	troubleshooting, maintenance, fabrication,
36	VIII.		B.Tech-Electronics and	1019172231	VISIT		innovation, record keeping, documentation etc To inculcate innovative thinking and thereby

1 [I	<u> </u>	B.Tech-Electronics and	- 1	Г		To set up self maintenance cell within departments
	VR17	19	Computer Engineering			CO4	to ensure optimal usage of infrastructure facilities.
	VRI7	19	B,Tech-Electronics and			CO1	Demonstrate basic operation and characteristics of
	VKI7		Computer Engineering		L	COI	op-amp.
	VR17	19	B.Tech-Electronics and			CO2	Interpret different linear and non-linear applications
37			Computer Engineering	1004173101	Linear IC		of Op-Amp.
ĺΙ	VR17	19	B.Tech-Electronics and Computer Engineering		Applications	CO3	Design & analyze different types of active filters
			B.Tech-Electronics and		<u> </u>		using Op-Amp.
	VRI7	19	Computer Engineering			CO4	Compare different types of ADC and DACs
	VR17	19	B.Tech-Electronics and				Understand the structure of commercially available
	VKI7	19	Computer Engineering			COI	digital integrated circuit families
,	VR17	19	B.Tech-Electronics and		[CO2	Learn the IEEE Standard 1076 Hardware
38		**	Computer Engineering	1004173104	Digital IC		Description Language (VHDL
	VR17	19	B.Tech-Electronics and Computer Engineering		Applications	CO3	Model complex digital systems at several levels of
			B.Tech-Electronics and				abstractions, behavioural, structural, simulation, Analyze and design basic digital circuits with
	VR17	19	Computer Engineering			CO4	combinatorial and sequential logic CO4 circuits
	VR17	19	B.Tech-Electronics and				Understand the concepts of architecture, memory
1	VKI7	19	Computer Engineering		1	COi	organization of Intel 8086 microprocessor and Intel
	VR17	19	B.Tech-Electronics and		MICROPROCE	CO2	Summarize the concepts of addressing modes,
39			Computer Engineering	1019173105	SSORS AND		instruction set of Intel 8086 microprocessor and
	VR17	19	B.Tech-Electronics and		MICROCONTR	CO3	Develop an assembly language programs for simple
			Computer Engineering B.Tech-Electronics and		OLLERS		problem statements of 8086, 8051 and PIC Design an interface between peripheral chips &
	VR17	19	Computer Engineering			CO4	processors using assembly language programs.
	VDIZ	10	B.Tech-Electronics and				Identify the basic concepts and various data model
	VR17	19	Computer Engineering		•	COI	used in database design, design ER model for a
	VR17	19	B.Tech-Electronics and		DATA BASE	CO2	Apply relational database theory and be able to
40		.,	Computer Engineering	1012173103	MANAGEMEN		describe relational algebra expression, tuple and
	VR17	19	B.Tech-Electronics and		T SYSTEMS	CO3	Interpret the use of normalization and functional
			Computer Engineering B.Tech-Electronics and	-			dependency, indexing and hashing technique used
	VR17	19	Computer Engineering			CO4	Apply and relate the concept of transaction, concurrency control and recovery in database.
	MDIT		B.Tech-Electronics and				
	VR17	19	Computer Engineering			COI	Install Python IDE and run basic Python scripts.
	VR17	19	B.Tech-Electronics and		PYTHON	CO2	Understand the operators, functions, key Concepts
41			Computer Engineering	1005173102	PROGRAMMIN		of Object Oriented Programming in python
	VR17	19	B.Tech-Electronics and		G	CO3	Access Python from various online resources and
			B.Tech-Electronics and	1			import packages to the current working Develop front end GUI using Visualization
1	VRI7	19	Computer Engineering			CO4	Libraries and Multithreading techniques
	VD17		B.Tech-Electronics and				Design the various linear and Non Linear
	VR17	19	Computer Engineering]	'	CO1	application of op-amp.
	VR17	19	B.Tech-Electronics and]		CO2	Analyse oscillators and multivibrator circuits using
42	*****		Computer Engineering	1019173121	IC Applications	CO2	op-amp
	VR17	19	B.Tech-Electronics and		Lab	CO3	Apply the operation of IC 555 Timers for various
		-	Computer Engineering B.Tech-Electronics and	-			applications.
	VR17	19	Computer Engineering		[CO4	Examine the basic digital circuits with combinatorial and sequential logic circuits using
	1.00.10		B.Tech-Electronics and		-		Understand how to write, test, and debug simple
	VR17	19	Computer Engineering			COI	Python programs
	VR17	19	B.Tech-Electronics and]	PYHTON	CO2	Describe the Numbers, Math functions, Strings,
43		.,	Computer Engineering	1019173122	PROGRAMMIN	-02	List, Tuples and Dictionaries in Python Develop
"	VR17	19	B.Tech-Electronics and		G LAB	CO3	Express different Decision Making statements and
			Computer Engineering B.Tech-Electronics and	-			Functions
	VR17	19	Computer Engineering			CO4	Understand and summarize different File handling
		 	B.Tech-Electronics and		1		operations Understand, appreciate and effectively explain the
	VRI7	19	Computer Engineering			COI	underlying concepts of database technologies
	1/017	,,,	B.Tech-Electronics and	1	DATABASE		Design and implement a database schema for a
44	VR17	19	Computer Engineering	1019173123	MANAGEMEN	CO2	given problem-domain
	VR17	19	B.Tech-Electronics and	10171/3123	T SYSTEMS	CO3	Populate and query a database using SQL
	*****	1 1	Computer Engineering	-	LAB		DML/DDL commands.
	VR17	19	B.Tech-Electronics and			CO4	Declare and enforce integrity constraints on a
-			Computer Engineering B.Tech-Electronics and		 		database using a state-of-the-art RDBMS.
	VR17	19	Computer Engineering			CO1	Interpret the various aspects of IPR
		1	B.Tech-Electronics and				Conclude importance of copyrights, trademarks and
	VR17	19	Computer Engineering	1	IPR &	CO2	trade secrets
45	VD17	10	B.Tech-Electronics and	1099173101	PATENTS		
	VR17	19	Computer Engineering			CO3	Obtain patent rights for new innovation
			1 m m 1 m 1 1	6	1		
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Elaborate on Privacy issues

1	1		B.Tech-Electronics and				
	VR17	19	Computer Engineering			COI	Able to analyze the performance of an algorithm in terms of time and space.
Ì	VR17	19	B.Tech-Electronics and		DECKIN AND	003	Give an intuition on how to find a solution to large
46	VR17	19	Computer Engineering	1019173201	DESIGN AND ANALYSIS OF	CO2	problems by dividing them into smaller sub
"	VR17	19	B.Tech-Electronics and	1019173201	ALGORITHMS	CO3	Identifying which designing technique can be used
}			Computer Engineering		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		to solve a particular problem.
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Knowing how to explore the solution space by
\vdash			B.Tech-Electronics and				using Branch and Bound technique
	VR17	19	Computer Engineering			CO1	Understand HTML tags to design static web pages
	VR17	19	B.Tech-Electronics and		ı	CO2	Describe the basic concepts of Java Scripts to
47	VICI7	19	Computer Engineering	1019173202	WEB DESIGN	CO2	design dynamic web pages
``	VR17	19	B.Tech-Electronics and	1017175202	THE DESIGN	CO3	Familiarize the concepts of PHP and AJAX
			Computer Engineering B.Tech-Electronics and				<u> </u>
	VR17	19	Computer Engineering			CO4	Analyze a given problem and apply requisite appropriate tools for designing dynamic and
	VD17	10	B.Tech-Electronics and				Compare the fabrication process for MOS,CMOS
1	VR17	19	Computer Engineering			COI	and BICMOS technologies along with their
	VRI7	19	B.Tech-Electronics and			CO2	Explain the concepts of design rules during the
48			Computer Engineering	1004173203	VLSI Design		layout design.
	VR17	19	B.Tech-Electronics and Computer Engineering			CO3	Estimate various scaling Models and factors and
			B.Tech-Electronics and		}		their effects on MOSFET parameters. Evaluate various design issues of VLSI Circuits
	VR17	19	Computer Engineering			CO4	and illustrate FPGA Design
	VR17	19	B.Tech-Electronics and			COI	Analyse the digital signals using various digital
	VICI7	1.7	Computer Engineering			COI	transforms DFT, FFT etc.
	VR17	19	B.Tech-Electronics and		DIGITAL	CO2	Design and realize various digital filters for digital
49		<u> </u>	Computer Engineering B.Tech-Electronics and	1004173204	SIGNAL		signal processing
	VR17	19	Computer Engineering		PROCESSING	CO3	Evaluate the different multi rate digital signal processing systems.
	VR17	19	B.Tech-Electronics and				
	VRIT	19	Computer Engineering			CO4	Illustrate the architecture of DSP processor
1	VR17	19	B.Tech-Electronics and	12		COI	Match organizational needs to the most effective
			Computer Engineering B.Tech-Electronics and		SOFTWARE		software development model.
_ i	VRI7	19	Computer Engineering		PROJECT	CO2	Understand the basic concepts and issues of software project management
50	VD17	19	B.Tech-Electronics and	1019173203	MANAGEMEN		
	VR17	19	Computer Engineering]	T (OPEN ELECTIVE-I)	CO3	Effectively planning the software projects.
	VR17	19	B.Tech-Electronics and		LECCIIVE	CO4	Implement the project plans through managing
<u> </u>			Computer Engineering B.Tech-Electronics and				people, communications and change.
'	VR17	19	Computer Engineering			CO1	Understand the Main instrument system and types of electrodes and transducers to extract
	VR17	19	B.Tech-Electronics and	1	BIO-MEDICAL		Anatomy of heart, lungs, eye and ears. Devices to
51	VICI7	19	Computer Engineering	1019173204	ENGINEERING	CO2	do tests on heart, lungs, eye and ears.
1	VR17	19	B.Tech-Electronics and	1019173204	(OPEN	CO3	Diagnose & Monitor the health of patient in
			Computer Engineering B.Tech-Electronics and		ELECTIVE-I)		intensive care unit.
	VRI7	19	Computer Engineering			CO4	Improve usage of various processes and sockets in real-time applications
	140.45	1.0	B.Tech-Electronics and		-	-	Analyze the architecture and features of UNIX
	VR17	19	Computer Engineering			COI	Operating System
1	VR17	19	B.Tech-Electronics and		UNIX	CO2	Elaborate various file processing commands used in
52		.,	Computer Engineering	1019173205	PROGRAMMIN	-02	UNIX.
	VR17	19	B.Tech-Electronics and Computer Engineering		G (OPEN ELECTIVE-I)	CO3	Build Regular expressions for pattern matching and
			B.Tech-Electronics and	1	LLLCTIVE-I)		apply them to various filters for a specific task. Select appropriate actuators and sensors for a robot
	VRI7	19	Computer Engineering			CO4	based on specific application.
	VR17	19	B.Tech-Electronics and			COI	Identify various robot configuration and
1	7107	17	Computer Engineering			COI	components
	VR17	19	B.Tech-Electronics and		ROBOTICS	CO2	Select appropriate actuators and sensors for a robot
53		-	Computer Engineering B.Tech-Electronics and	1003173203	(OPEN		based on specific application
	VR17	19	Computer Engineering		ELECTIVE-I)	CO3	Carry out kinematic and dynamic analysis for simple serial kinematic chains.
	MDIT	10	B.Tech-Electronics and	1			Perform trajectory planning for a manipulator by
	VRI7	19	Computer Engineering			CO4	avoiding obstacles.
	VR17	19	B.Tech-Electronics and			COI	Develop the necessary Algorithm and Assembly
		- "	Computer Engineering	-	MICRO	<u> </u>	Language Program for the arithmeticand logical
	VR17	19	B.Tech-Electronics and Computer Engineering		PROCESSORS &	CO2	Identify various interfacing cards and perform 8086
54			B.Tech-Electronics and	1004173221	MICRO	<u> </u>	interfacing with different peripherals and Implement different data transfer techniques with
	VR17	19	Computer Engineering		CONTROLLER	CO3	8051 microcontroller.
	VR17	19	B.Tech-Electronics and	1	S LAB	CO4	
	/ KI/	17	Computer Engineering		<u> </u>	CO4	Design a microcontroller for simple applications
	VR17	19	B.Tech-Electronics and			COI	Design the CMOS circuits for various
1	L		Computer Engineering	_	1		combinational and sequential logic circuits using

_					_		
	VR17	19	B.Tech-Electronics and Computer Engineering			CO2	Estimate the Back end layout design of various
55			B.Tech-Electronics and	1004173222	VLSI Lab		circuits and analyse it interms of area, power and Explain the difference between layout and
	VR17	19	Computer Engineering		i	CO3	schematic using LVS tool.
ľ	VR17	19	B.Tech-Electronics and		Ì	CO.4	Formulate various designs and verify the
	VK17		Computer Engineering			CO4	waveforms using eldo simulator tool.
	VR17	19	B.Tech-Electronics and			COI	Analyze a web page and identify its elements and
ŀ			Computer Engineering B.Tech-Electronics and		-		attributes.
	VR17	19	Computer Engineering		WEB DESIGN	CO2	Build static and dynamic web pages using HTML
56			B.Tech-Electronics and	1019173221	Lab		and CSS. Develop client side manipulations in web pages
	VR17	19	Computer Engineering		Lab	CO3	using Java Script.
Ì	VR17	19	B.Tech-Electronics and			- CO.I	Understanding various applications to implement in
	VK17	19	Computer Engineering			CO4	JDBC.
i	VR17	19	B.Tech-Electronics and			COI	Create an Industrial environment and culture within
			Computer Engineering				the institution.
	VR17	19	B.Tech-Electronics and		INDUSTRY	CO2	Provide students hands on experience on.
57	VIXI	13	Computer Engineering	1019173241	ORIENTED	CO2	troubleshooting, maintenance, fabrication, innovation, record keeping, documentation etc
			B.Tech-Electronics and	1017113241	MINI PROJECT		Inculcate innovative thinking and thereby preparing
Į	VR17	19	Computer Engineering			CO3	students for main project.
- {	VR17	19	B.Tech-Electronics and			CO4	Set up self maintenance cell within departments to
	71(17	1.7	Computer Engineering			CO#	ensure optimal usage of infrastructure facilities.
	VR17	19	B.Tech-Electronics and			COI	Understanding of basic digital switching
-			Computer Engineering B.Tech-Electronics and		DATA		techniques.
	VR17	19	Computer Engineering		COMMUNICAT	CO2	Analyze the OSI model, TCP/IP model, MAC layer protocols and LAN technologies
58			B.Tech-Electronics and	1019174101	ON AND -		Design of different Elementary Data Link
	VR17	19	Computer Engineering		COMPUTER	CO3	Protocols.
	VR17	19	B.Tech-Electronics and		NETWORKS	604	Minimize the error by using different control
	VK17	19	Computer Engineering			CO4	methods
i	VR17	19	B.Tech-Electronics and			COI	Understand the Architectural view, protocols and
			Computer Engineering)		applications of IoT.
	VR17	19	B.Tech-Electronics and Computer Engineering		IOT AND ITS	CO2	Analyse the communication protocols and
59			B.Tech-Electronics and	1004174105	APPLICATION -		standards used in IoT Design the simple IoT applications to monitor or
.	VR17	19	Computer Engineering		S	CO3	control loT devices using simulation or hardware.
	VR17	10	B.Tech-Electronics and				
	VRIT	19	Computer Engineering			CO4	implementation of the real time IoT applications.
	VR17	19	B.Tech-Electronics and			COI	Recognize the characteristics of machine learning
			Computer Engineering				that make it useful to real-world Problems
	VRI7	19	B.Tech-Electronics and		NACUUM	CO2	Characterize machine learning algorithms as
60			Computer Engineering B.Tech-Electronics and	1005174102	MACHINE LEARNING		supervised, semi-supervised, and Unsupervised
	VR17	19	Computer Engineering		LLAIGHING	CO3	Be able to use support vector machine, regularized regression algorithms
	UD 17	10	B.Tech-Electronics and	i	i i		Understand the concept behind neural networks for
	VR17	19	Computer Engineering]	CO4	learning non-linear functions
	VR17	19	B.Tech-Electronics and			COI	Examine the fundamentals of gray scale and color
	71117	17	Computer Engineering				image processing.
	VR17	19	B.Tech-Electronics and		DIGITAL	CO2	Apply different transforms and compression
61			Computer Engineering B.Tech-Electronics and	1004174102	IMAGE		methods on image for image
	VR17	19	Computer Engineering		PROCESSING	CO3	Analyze the methods to extract information from the image in terms of spatial
			B.Tech-Electronics and	1			Validate the different techniques of color and multi
L	VR17	19	Computer Engineering			CO4	resolution processing.
	VD:7	10	B.Tech-Electronics and				Understand the Concept of Parallel Processing and
	VR17	19	Computer Engineering		ADVANCED	COI	its applications
	VR17	19	B.Tech-Electronics and		ADVANCED COMPUTER	CO2	Implement the Hardware for Arithmetic Operations
62		- '	Computer Engineering	1019174102	ARCHITECTUR		
	VR17	19	B.Tech-Electronics and		E	CO3	Analyze the performance of different scalar
			Computer Engineering B.Tech-Electronics and		(Elective-I)		Computers
	VR17	19	Computer Engineering		1	CO4	Develop the Pipelining Concept for a given set of
			B.Tech-Electronics and	 			Instructions Outline orbital mechanics and launch
	VR17	19	Computer Engineering			COI	methodologies
	VD12	10	B.Tech-Electronics and	1	SATELLITE	<i>p</i>	Apply Concepts of Attitude and orbit control,
63	VR17	19	Computer Engineering	1004174201	COMMUNICAT	CO2	telemetry, tracking, Command andmonitoring,
0,	VR17	19	B.Tech-Electronics and	7 10041/4201	IONS	CO3	
	111/	1.7	Computer Engineering		(Elective-I)	CO3	Design link power budget for satellites
	VR17	19	B.Tech-Electronics and		1	CO4	Compare satellite access techniques
<u> </u>		<u> </u>	Computer Engineering				
1	VR17	19	B.Tech-Electronics and			COI	Apply the various phases of compiler and compare
			Computer Engineering	-	CVCTCLA		its working with assembler.
6.1	VR17	19	B.Tech-Electronics and Computer Engineering	1010174103	SYSTEM PROGRAMMIN	CO2	Understand various concepts in assemblers and processors

۲۳ [VD17	10	B.Tech-Electronics and	1017177103	G [602	Classify machines by their power to recognize
-	VR17	19	Computer Engineering		(Elective-I)	CO3	languages
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Analyze how linker and loader executable, interpreters and editors
ļ	VR!7	19	B.Tech-Electronics and Computer Engineering		FUNDAMENTA-	COI	Understand the concepts of data warehouse and data mining
	VR17	19	B.Tech-Electronics and Computer Engineering	:	LS OF DATA MINING AND	CO2	Use data pre-processing techniques to build data warehouse
65	VR17	19	B.Tech-Electronics and Computer Engineering	1019174104	DATA WAREHOUSIN	CO3	Analyze transaction databases for association rules
	VR17	19	B.Tech-Electronics and Computer Engineering		G	CO4	Understand the details of different algorithms made available by popular commercial data mining software and solve real data mining problems by
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Understand the CAD Tools and VHDL language.
	VR17	19	B.Tech-Electronics and Computer Engineering		STRUCTURAL	CO2	Design various combinational circuits and Sequential circuits using VHDL code
66	VR17	19	B.Tech-Electronics and Computer Engineering		DESIGN (Elective-II)	CO3	Apply the Verilog language for testing of combinational and sequential circuits
	VR17	19	B.Tech-Electronics and Computer Engineering		(Electro-II)	CO4	Analyze the Synthesis process and testing of digital logic circuits using CAD
	VR17	19	B.Tech-Electronics and Computer Engineering		OBJECT	COI	Build solutions to the complex problems using object-oriented approach
	VR17	19	B.Tech-Electronics and Computer Engineering		ORIENTED ANALYSIS	CO2	Identify classes and responsibilities of the problem
67	VR17	19	B.Tech-Electronics and Computer Engineering	1012172205	AND DESIGN USING	CO3	domain Apply UML tools for various case studies
	VR17	19	B.Tech-Electronics and		UML	CO4	Represent classes, objects, responsibilities and
	VR17	19	Computer Engineering B.Tech-Electronics and			COI	states using UML notations. Preparing for data summarization, query, and
	VR17	19	Computer Engineering B.Tech-Electronics and		BIG DATA	CO2	Applying data modelling techniques to large data
68	VR17	19	Computer Engineering B.Tech-Electronics and	1005174103	ANALYTICS (Elective-II)	CO3	Sets Creating applications for Big Data analytics
	VR17	19	B.Tech-Electronics and		,	CO4	Building a complete business data analytic solution
	VR17	19	Computer Engineering B.Tech-Electronics and			COI	Understand the concepts of MOS Devices,
	VR17	19	Computer Engineering B.Tech-Electronics and			CO2	Modeling, Open-Loop Comparators and different Analyze the characteristics of MOS with different
69		19	Computer Engineering B.Tech-Electronics and	1019174106	ANALOG IC DESIGN		Circuits. Design any Analog Circuits in real time
	VR17		Computer Engineering B.Tech-Electronics and			CO3	applications. Extend the Analog Circuit Design to Different
_	VR17	19	Computer Engineering B.Tech-Electronics and			CO4	Applications in Real Time. Develop various DSP Algorithms using MATLAB
	VR17	19	Computer Engineering B.Tech-Electronics and		DIGITAL	COI	Software package. Analyze and Observe Magnitude and phase
70	VR17	19	Computer Engineering	1019174121	SIGNAL	CO2	characteristics (Frequency response
	VR17	19	B.Tech-Electronics and Computer Engineering		PROCESSING LAB	CO3	Summerize the fundamentals of gray scale and color image processing
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Apply different transforms and compression methods on image for image processing
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Identify problems that are amenable to solution by various methods, and which different methods may
	VR17	19	B.Tech-Electronics and Computer Engineering	1		CO2	Formalize a given problem in the language/framework of different methods.
71	VR17	19	B.Tech-Electronics and Computer Engineering	1019174122	IOT LAB	CO3	Implement basic algorithms (e.g., standard search
	VR17	19	B.Tech-Electronics and	1		CO4	algorithms or dynamic programming). Design and carry out an empirical evaluation of
	VR17	19	B.Tech-Electronics and			COI	Understand the basic concepts of an embedded
	VR17	19	B.Tech-Electronics and	1	INTRODUCTIO		system and able to know an embedded system Design the Embedded hardware by considering the
72	VR17	19	Computer Engineering B.Tech-Electronics and	1019174201	N TO EMBEDDED	CO2	Analyse the various embedded firmware design
	VR17	19	Computer Engineering B.Tech-Electronics and	-	SYSTEMS	CO3	approaches on embedded environment to suit for Interprete how to integrate hardware and firmware
-			Computer Engineering B.Tech-Electronics and			-	of an embedded system and apply this knowledge to
	VR17	19	Computer Engineering B.Tech-Electronics and	1	SOFTWARE	COI	Understanding the purpose of Software Testing. Understand the Transaction Flow Testing and
73	VR17	19	Computer Engineering B.Tech-Electronics and	1012173201	TESTING	CO2	Dataflow testing Test the software using domain testing and Logic
	VR17	19	Computer Engineering		GIES	CO3	Based Testing

ι Γ	11012	**	B.Tech-Electronics and	1	Г		Apply the software testing tools for real world
	VR17	19	Computer Engineering			CO4	applications
	VR17	19	B.Tech-Electronics and Computer Engineering		1	COI	Understand the concepts of MOS Design, Semiconductor Memories, Flash Memory, RAM
	VR17	19	B.Tech-Electronics and Computer Engineering		DIGITAL IC	CO2	Design and analysis of Combinational and Sequential MOS Circuits.
74	VR17	19	B.Tech-Electronics and Computer Engineering	1019174202	DESIGN	CO3	Extend the Digital IC Design to Different
	VR17	19	B.Tech-Electronics and			CO4	Applications. Comparative analysis of all Parasitics.
	VRI7		Computer Engineering B.Tech-Electronics and				
		19	Computer Engineering B.Tech-Electronics and		AUTOMATA	COI	Construct LL, SLR, CLR and LALR parse table. Understand Parser and its types i.e. Top-down and
75	VR17	19	Computer Engineering	1019174203	THEORY&CO	CO2	Bottom-up parsers.
ì [VR17	19	B.Tech-Electronics and Computer Engineering		MPILER DESIGN	CO3	Classify machines by their power to recognize languages
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Syntax directed translation, synthesized and inherited attributes and analyze techniques for code
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Understand the evolution and architectures of ARM processors
	VRI7	19	B.Tech-Electronics and		ADVANCED	CO2	Apply the architectural features of ARM LPC2148
76	VR17	19	Computer Engineering B.Tech-Electronics and	1019174204	MICROCONTR OLLERS	CO3	microcontrollers. Analyze and understand the instruction set and
			Computer Engineering B.Tech-Electronics and		OLLLING		development tools of ARM Design an interfacing peripheral devices to ARM
	VR17	19	Computer Engineering B.Tech-Electronics and			CO4	LPC2148
	VR17	19	Computer Engineering			CO1	Understand concepts of Real-Time Operating systems.
77	VR17	19	B.Tech-Electronics and Computer Engineering	10!2173101	HUMAN COMPUTER	CO2	Describe the basic functions of RTOS and programming concepts of RTOS
''	VR17	19	B.Tech-Electronics and Computer Engineering	10:21/5101	INTERACTION	CO3	Analyze the different case studies
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Create a new embedded software and can port it onto the board
	VR17	19	B.Tech-Electronics and			COI	Understand the principles and practices involved in
	VR17	19	Computer Engineering B.Tech-Electronics and		REALTIME	CO2	cryptography and network security Understand the various symmetric and Asymmetric
78			B.Tech-Electronics and	1019174205	OPERATING		encryption algorithms Identifying cryptographic protocols, hash functions,
	VR17	19	Computer Engineering B.Tech-Electronics and		SYSTEMS	CO3	authentication, key management, key exchange, Design of network security solutions for E-mail
	VR17	19	Computer Engineering			CO4	Security like PGP, S/MIME and web security like
	VR17	19	B.Tech-Electronics and Computer Engineering		:	CO1	Understand the principles and practices involved in cryptography and network security
70	VR17	19	B.Tech-Electronics and Computer Engineering	1005184101	CRYPTOGRAP HY AND	CO2	Explain the various symmetric and Asymmetric encryption algorithms
79	VR17	19	B.Tech-Electronics and Computer Engineering	1005174101	NETWORK SECURITY	CO3	Identifying cryptographic protocols, hash functions, authentication, key management, key exchange,
-	VR17	19	B.Tech-Electronics and		SECORITI	CO4	Design of network security solutions for E-mail
\vdash	VR17	19	Computer Engineering B.Tech-Electronics and	<u> </u>		COI	Security like PGP, S/MIME and web security like Apply communication concepts to solve wireless
			Computer Engineering B.Tech-Electronics and			-	communications problems. Summarize existing model's and apply cellular
80	VR17	19	Computer Engineering B,Tech-Electronics and	1019174206	WIRELESS SENSOR	CO2	system design concepts, wireless wide Analyse various multiple access schemes used in
	VR17	19	Computer Engineering		NETWORKS	CO3	wireless communications and existing
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Demonstrate wireless local area networks and their specifications. Apply the concepts to orthogonal
	VR17	19	B.Tech-Electronics and Computer Engineering			COI	Understand the concepts, characteristics, principles and operation of cellular systems.
	VR17	19	B.Tech-Electronics and	1	CELLULAR AND MOBILE	CO2	Apply Concepts, principles to Co-channel
81	VR17	19	B.Tech-Electronics and	1004174101	COMMUNICAT	CO3	interference Reduction factor, Desired C/I, Analyse Point to point model, other cell coverage of
1			Computer Engineering B.Tech-Electronics and	-	IONS		signal and traffic, frequency and Compare concepts of handoff and architectures of
-	VR17	19	Computer Engineering B.Tech-Electronics and			CO4	GSM, Technology comparison of 3G,4G and 5G Model the concepts and engineering tools to arrive
	VR17	19	Computer Engineering	1		CO1	at design solutions for the
82	VR17	19	B.Tech-Electronics and Computer Engineering	1019174281	INTERNSHIP	CO2	Exhibit critical thinking and problem solving skills by analysing underlying issues to
02	VR17	19	B.Tech-Electronics and Computer Engineering	1017174201	114117/1421111	CO3	Solve real life challenges in the workplace by analysing work environment and
	VR17	19	B.Tech-Electronics and	1		CO4	Articulate career options by considering
	L	<u> </u>	Computer Engineering		1		opportunities in company, sector, industry,

	VR17	19	B.Tech-Electronics and Computer Engineering		TECHNICAL SEMINAR	COI	Carryout literature survey, and choose a relevant topic reported in recent IEEE/CSI/ACM/ conference publications / transactions in the
83	VR17	19	B.Tech-Electronics and Computer Engineering	1019174251		CO2	Simulate and analyze the results reported in the chosen paper for seminar topic.
	VR17	19	B.Tech-Electronics and Computer Engineering		SEMINAR	CO3	Communicate effectively before the expert panel and develop technical reports.
	VR17	19	B.Tech-Electronics and Computer Engineering		C	CO4	Respond to the queries raised by the evaluation committee and audience
	VRI7	19	B.Tech-Electronics and Computer Engineering			COI	Demonstrate knowledge in the program domain.
84	VR17 19	19	B.Tech-Electronics and Computer Engineering	1019174261	COMPREHENS IVE VIVA	CO2	Present views cogently and precisely.
37	VR17	19	B.Tech-Electronics and Computer Engineering	1019174201		CO3	Exhibit professional etiquette suitable for career progression.
	VR17	19	B.Tech-Electronics and Computer Engineering			CO4	Apply computer science theory and software development fundamentals to produce computing-
	VR17	19	B.Tech-Electronics and Computer Engineering			CO1	Apply the software engineering principles in planning, formulating an innovative design/ approach and computing the requirements
85	VR17	19	B.Tech-Electronics and Computer Engineering	1019174231	MAIN PROJECT	CO2	Ability to perform individually as well as in a team, accepting responsibility, taking initiative, and
	VR17	19	B.Tech-Electronics and Computer Engineering		FROJECT	CO3	Ability to use formal and informal communications with team members and guide, make presentations
	VRI7	19	B.Tech-Electronics and Computer Engineering			CO4	Develop/implement the solutions with appropriate techniques, resources and contemporary tools.





			VIGNAN'S INS	TITUTE OF I	NFORMATI	ON TEC	CHNOLOGY(A)
				I. COMPUTE	R SCIENCE	ENGINE	
	part of			COURS	E OUTCOM	ES	
S.No	Regula tion	Program me Code	Programme Name	Course Code	Course Name	СО	Course Outcome: After the completion of the course student will be able to
	VR17	05	B.Tech-Computer Science and Engineering	5.		COI	Enhance English Language by relating the ideas of eminent personalities.
	VR17	05	B.Tech-Computer Science and Engineering			CO2	Articulate the technological advancements fluently.
1	VR17	05	B.Tech-Computer Science and Engineering	1000171101	English -I	CO3	Inculcate the art of thinking and writing clearly and logically.
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Enact various themes through team work and learn the usage of vocabulary through humourous texts.
	VR17	05	B.Tech-Computer Science and Engineering			COI	Solve the first and higher order linear differential equations.
	VR17	05	B.Tech-Computer Science and Engineering		ENGINEE RING	CO2	Estimate extrema and series expansions of functions of several variables.
2	VR17	05	B.Tech-Computer Science and Engineering	1000171102	MATHEM ATICS-I	CO3	Interpret area and volume using double integral and triple integral.
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Evaluate solution of Ordinary differential equations by using Laplace Transform technique.
	VR17	05	B.Tech-Computer Science and Engineering			COI	Estimate numerical solution of non Linear equation.
	VR17	05	B.Tech-Computer Science and Engineering		ENGINEE RING	CO2	Construct Interpolating polynomial for the given data.
3	VR17	05	B.Tech-Computer Science and Engineering	1000171103	MATHEM ATICS-II	CO3	Calculate Numerical Solution of ODE and Numerical Integration.
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Evaluate Fourier series and Fourier transforms for functions.
	VR17	05	B.Tech-Computer Science and Engineering			CO1	Interpret fundamentals of computers and convert flowcharts/algorithms to C Programs, compile and debug programs
4	VR17	05	B.Tech-Computer Science and Engineering	1,000,51,105	COMPUTE R PROGRAM	CO2	Apply decision making and Iterative feature of C Programming language effectively.
4	VR17	05	B.Tech-Computer Science and Engineering	1000171105	MING USING C	CO3	Design and implement programs to analyze the different pointer applications
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Apply structures and unions and Implement file Operations in C programming for any given application
	VR17	05	B.Tech-Computer Science and Engineering			COI	Understand the use of drawing instruments to construct the polygons and curves
5	VR17	05	B.Tech-Computer Science and Engineering	1000171106	ENGINEE RING	CO2	Apply the principle of orthographic projections to draw Orthographic projections of points, lines.
	VR17	05	B.Tech-Computer Science and Engineering		DRAWING	CO3	Construct the various types of planes and solids its views in different Positions

г							
.			B.Tech-Computer				Develop isometric views of simple objects
	VR17	05	Science and				
			Engineering			CO4	
ŀ	-		B.Tech-Computer				Describe the wave phenomena of light and
	VR17	05	Science and			COI	working principle of optical instruments.
			Engineering				
			B.Tech-Computer				Apply the knowledge of basic quantum
	VR17	05	Science and				mechanics to understand wave equation.
ا ہ			Engineering		APPLIED	CO2	mara adam mara adam an
6			B.Tech-Computer	1000171107	PHYSICS		Understanding the basic knowledge of free
ļ	VR17	05	Science and			CO3	electron theory of materials.
- 1		00	Engineering			COS	dection meory of materials.
- 1			B.Tech-Computer				Maka waa afaha hada aasaa af
	VR17	05	Science and				Make use of the basic concepts of energy
	VKI	U.S				604	bands in crystalline solids to understand
			Engineering			CO4	semiconductor physics.
		0.5	B.Tech-Computer				Apply the usage of phonemes while referring
	VRI7	05	Science and			CO1	to the dictionary
			Engineering				
			B.Tech-Computer		ENGLISH -		Articulate with others by using proper
	VR17	05	Science and		COMMUN		functions.
7		_	Engineering	1000171121	ICATION	CO2	
′			B.Tech-Computer	1000171121	SKILLS		Enact the roles with proper body language.
	VR17	05	Science and		LABORAT	CO3	
			Engineering		ORY-I		
			B.Tech-Computer				Communicate fluently with proper
	VR17	05	Science and				pronunciation
			Engineering		i l	CO4	pronunciation
			B.Tech-Computer				Experimentation of laws of vibrations in
	VR17	05	Science and			COL	strenteched string
	11017	0.5	Engineering			COL	strenteened string
			Engineering				
	ĺ		B.Tech-Computer				Determination of velocity of sound, rigidity
	VR17	05	Science and		ENGINEE		modulus of a wire, acceleration due to gravity
			Engineering		RING		radius of gyration and Planck's constant.
8				1000171122	PHYSICS	CO2	
			B.Tech-Computer		LABORAT		Analyze the voltage vs. current characteristics
	VR17	05	Science and		ORY	CO3	of Zener diode and temperature vs. resistance
	'		Engineering			005	characteristics of a thermistor
							<u> </u>
i	1		B.Tech-Computer				Demonstration of formation Newton's rings,
	VR17	05	Science and				diffraction pattern using grating and induced
		_	Engineering			CO4	magnetic field in a circular coil
			B.Tech-Computer				Analyze a given c program to identify bugs
	VR17	05	Science and			COI	and write the appropriate code.
			Engineering				
			B.Tech-Computer	1	COMPUTE		Apply decision making and Iterative feature
	VRI7	05	Science and		R		of C Programming language to implement
	,		Engineering		PROGRAM	CO2	them effectively.
9			B.Tech-Computer	1000171128	MING		
	VR17	05	Science and		LABORAT	CO2	Build programs using functions, arrays and
	''`'	O.J	Engineering		ORY	CO3	pointers.
				-	OKI		
		0.5	B.Tech-Computer				Develop a c program for implementing user
	VR17	05	Science and				defined data types and implement file
			Engineering			CO4	handling mechanisms.
			B.Tech-Computer				Develop communication skills by inferring
	VR17	05	Science and			CO1	the technological advancements.
			Engineering	J			
			B.Tech-Computer				Identify the life of eminent personalities.
	VRI7	05	Science and				,
10			Engineering	100015:	ENGLISH-	CO2	
10			B.Tech-Computer	1000171201	II		Relate the importance of Environment and its
	i l					-	
	VR17	05	Science and	1	1	(7)4	ICHCIDINONIHIII IA IANAHAAA LAACEIRA
	VR17	05	Science and Engineering			CO3	sustainability to language learning

			D.Took Community		. г		
	VR17	05	B.Tech-Computer Science and				Create the art of writing by applying apt
	VKI7	UJ				004	vocabulary and grammar.
			Engineering		<u> </u>	CO4	
			B.Tech-Computer	·			Solve simultaneous linear equations
	VR17	05	Science and			CO1	numerically using rank of a matrix and also
			Engineering				Eigen values and Eigen vectors of a square
					1		matrix.
	1/0.7	0.5	B.Tech-Computer		ENGINEE		Identify and solve partial differential
	VRI7	05	Science and		RING		equations.
11			Engineering	1000171203	MATHEM	CO2	
			B.Tech-Computer		ATICS-III		Calculate gradient of a scalar function,
	VR17	05	Science and			CO3	divergence and curl of a vector function.
			Engineering				
			B.Tech-Computer	!			Evaluate line, surface and volume integrals
	VR17	05	Science and				using appropriate integral theorems.
			Engineering			CO4	
			B.Tech-Computer				Identify different polymers and their
	VRI7	05	Science and		1	COI	Engineering applications.
			Engineering				
		•	B.Tech-Computer		l		Describe various renewable and non-
	VR17	05	Science and		ADDITED		renewable energy resources.
12			Engineering	1000171211	APPLIED	CO2	
14			B.Tech-Computer	1000171211	CHEMIST		Acquire the knowledge of mechanism and
	VR17	05	Science and		RY	CO3	principles measures of corrosion.
			Engineering				The state of the s
		· ·	B.Tech-Computer				Illustrate green Synthesis, semi-conductors,
	VR17	05	Science and				super conductors and their applications in
			Engineering			CO4	industry.
							Elucidate the natural resource & their
	<u></u>		B.Tech-Computer				importance for the sustenance of life and
	VR17	05	Science and			CO1	recognises the need to conserve natural
			Engineering				resource.
			27.10				Gives the broad view on the various attributes
		0.5	B.Tech-Computer				of pollution & and their impact & measure to
	VR17	05	Science and		ENVIRON	ı	reduce he pollution along with waste
13			Engineering	1000171212	MENTAL	CO2	management.
			5.00		STUDIES		Debates on social issues both rural and urban
	i		B.Tech-Computer		1		environment possible means to combat the
	VR17	05	Science and			CO3	challenges and trace the legislation of India
	1 1		Engineering				towards sustainability.
			B.Tech-Computer				Educates about Environmental Impact
	VR17	05	Science and				Assessment, Environmental Impact Statement
			Engineering			CO4	& Environmental Audit.
			B.Tech-Computer			241	Relate the procedural and object paradigm,
	VR17	05	Science and			COI	streams, classes, functions, data and objects
			Engineering				with real world entities
			B.Tech-Computer	1	OBJECT		Apply the concepts of function overloading,
	VR17	05	Science and		ORIENTE		operator overloading, virtual functions and
	'	05	Engineering		D	CO2	
14			B.Tech-Computer	1000171215	PROGRAM	<u>CO2</u>	polymorphism
	VR17	05	Science and		MING	CO2	Classify inheritance with understanding of
	1111	0.5	Engineering		THROUGH	CO3	early and late binding.
				·	C++		
	VR17	05	B.Tech-Computer				Evaluate advanced features of C++
	V K17	U.S	Science and			60.	specifically exception handling and Standard
			Engineering		 	CO4	template library.
	VD	0.5	B.Tech-Computer				Analyze the force systems for equilibrium
	VR17	05	Science and			COI	conditions and able to draw free body
	\vdash		Engineering				diagram.
	1,,,,,,	05	B.Tech-Computer	1			Evaluate the frictional forces between contact
		113	Science and	I .	1		Investorace
	VR17	05	Engineering		ENGINEE	CO2	surfaces.

15			B.Tech-Computer	1000171216	MECHANI		Able to differentiate between centroid and
	VR17	05	Science and Engineering		CS	CO3	centre of gravity and determine Centroid, centre of gravity and second moment of area for composite Sections.
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Analyse the motion and calculate trajectory characteristics.
	VR17	05	B.Tech-Computer Science and Engineering			COI	Apply the usage of phonemes while referring to the dictionary
	VR17	05	B.Tech-Computer Science and Engineering		ENGLISH COMMUN	CO2	Articulate with others by using proper functions.
16	VR17	05	B.Tech-Computer Science and Engineering	1000171221	ICATION - SKILLS LAB-2	CO3	Enact the roles with proper body language.
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Communicate fluently with proper pronunciation
	VR17	05	B.Tech-Computer Science and Engineering			COI	Learn and apply basic techniques used in Chemistry laboratory for small/medium scale water analysis.
17	VR17	05	B.Tech-Computer Science and Engineering	1000171227	ENGINEE RING CHEMIST	CO2	Estimate the metal ions present in a domestic/industry sample solutions.
17	VR17	05	B.Tech-Computer Science and Engineering	10001/122/	RY LABORAT ORY	CO3	Utilize the fundamental laboratory techniques for titrations and synthetic procedures.
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Analyze data and gain experimental skills through instrumentation
	VR17	05	B.Tech-Computer Science and Engineering			CO1	Analyze a given c++ program to identify bugs and write the appropriate code.
18	VR17	05	B.Tech-Computer Science and Engineering	1000171220	OBJECT- ORIENTE	CO2	Examine the concepts of function overloading, operator overloading, exception handling and templates
10	VR17	05	B.Tech-Computer Science and Engineering	1000171229	D PROGRAM MING LAB	CO3	Build solution for a given scenario using appropriate OOP concepts
	VR17	05	B.Tech-Computer Science and Engineering		;	CO4	Experiment the critical order problems using STL and Generic Programming
	VR17	05	B.Tech-Computer Science and Engineering	:		COI	Outline R Studio and Programming with R
	VR17	05	B.Tech-Computer Science and Engineering		STATISTI	CO2	Explain the controls statements, Loops, Operators and functions of Programming Structures using R
19	VR17	05	B.Tech-Computer Science and Engineering	1005172101	CS AND R PROGRAM MING		Apply math functions and simulation to calculate probability and statistical distributions using R
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Perform Statistical tests using R to create and visualize graphics and explore datasets to create testable hypothesis and identify appropriate statistical tests.
	VR17	05	B.Tech-Computer Science and Engineering		\$ g , pgqg amma -	COI	Solve mathematical proofs and can apply various optimization techniques.
20	VR17	05	B.Tech-Computer Science and Engineering	1005177107	MATHEM ATICAL FOUNDAT	CO2	Illustrate properties and characteristics of various graphs

VR17 O5 Science and Engineering Science and Engineering VR17 O5 Science and Engineering Science and Engineering VR17 O5 Science and Engineering Science and Engineering Science and Engineering VR17 O5 Science and Engineering Sc	40 1							
VR17 05 Science and Engineering Science and Engineering Science and Engineering VR17 05 Science and Engineering Science and Engineering VR17 05 Science and Engineering Scienc	-			B.Tech-Computer	1000112102	COMPLITE		Apply basic counting techniques to solve
Part		VR17	05	Science and	93		CO3	
VR17 OS Science and Engineering VR17 OS Science and Engine				Engineering				
VR17 05 Science and Engineering 1005172104 Science and Engineering 1005172104 VR17 05 Science and Engineering 1005172104 VR17 05 Science and Engineering 1005172104 VR17 05 Science and Engineering 1005172104 VR17 05 Science and Engineering 1005172104 VR17 05 Science and Engineering 1005172104 VR17 05 Science and Engineering 1005172104 VR17 05 Science and Engineering 1005172104 VR17 05 Science and Engineering 1005172104 VR17 05 Science and Engineering 1005172104 VR17 05 Science and Engineering 1005172104 VR17 05 Science and Engineering 1005172105 VR17 VR17 05			_	B.Tech-Computer		2CIENCE		Solve the recurrence relations using various
VR17 O5 B.Tech-Computer Science and Engineering District Computer	VRI7	05						
VR17				Engineering		!	CO4	
VR17 O5 Science and Engineering B.Tech-Computer Science								Parform number system conversions and
VR17 OS B.Tech-Computer Science and Engineering VR17 OS Sc		VR17	05				COL	
VR17 O5 Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering Science an	l	****	0,0				COI	
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Part	- 1	VD17	05					
VR17 OS Science and Engineering	.	VKI	UD			DIGITAL		
VR17 O5 Science and Engineering	21				1005172103	LOGIC	CO2	
VR17				•				Design different combinational logic circuits.
VR17		VR17	05			52010.1	CO3	
VR17 OS Science and Engineering Science and Engineering B.Tech-Computer Science and Engineering								
VR17 OS Science and Engineering Scie				B.Tech-Computer		l í		Design synchronous counters and develop
VR17 OS Science and Engineering Scie		VR17	05	Science and				
VR17 OS B.Tech-Computer Science and Engineering				Engineering			CO4	
VR17 O5 Science and Engineering Science and Engineering Science and Engineering Science and Engineering VR17 O5 Science and Engineering VR17 O5 Science and Engineering VR17 O5 Science and Engineering Science and Engineering VR17 O5 Science and Engineering VR17 O5 Science and Engineering VR17 O5 Science and Engineering VR17 O5 Science and Engineering VR17 O5 Science and Engineering Science and Engineering VR17 O5 Science and Engineering Science and Engineering VR17 O5 Science and Engineering Science and Engineering VR17 O5 Science and Engineering Science and Engineering VR17 O5 Science and Engineering Science and Engineering VR17 O5 Science and Engineering Science and Engineering VR17 O5 Science and Engineering Science and Engineering VR17 O5 Science and Engineering Science and Engineering VR17 O5 Science and Engineering Science and Engineer								
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VR17 O5 B.Tech-Computer Science and Engineering VR17 O5 Sc							COI	with object-oriented paradigm
VR17					1			Hea Expertion has alling and a data and
Property Property		VR17	ns.					
VR17 05 B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineerin		VIC17	05			JAVA	000	
VR17 05 Science and Engineering CO4 Design various layouts along with applet usage CO4	22				1005172104	PROGRAM	<u> </u>	
Segmenting B.Tech-Computer Science and Engineering Science and		VD17	05			MING		
VR17		VRI	05	1			CO3	applications with modern tools
VR17 05 Science and Engineering Science and Engineering PROBLEM Science and Engineering PROF Science And Engineering PROF Science Engineering PROF Science Engineering PROF Science Engineering PROF Science Engineering PROF Science Engineering PROF Science Engineering PROF Science Engineering PROF Science Engineering PROF Science Engineering PROF Science Engineering PROF Science Engineering PROF Science Engineering PROF Science Engineering PROF Scie								
VR17 05 B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineerin								Design various layouts along with applet
VR17 05 B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineerin		VR17	05	1				usage
VR17 05 Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 Scienc				Engineering		<u></u>	CO4	
VR17 05 Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 Scienc				B.Tech-Computer				Relate data structure concepts with real time
VR17 05 Science and Engineering VR17 05 Science and Engineerin		VR17	05	Science and			CO1	
VR17 05 B.Tech-Computer Science and Engineering B.Tech-Computer Science Engineering B.Tech-Computer Science Engineering B.Tech				Engineering				
VR17 05 Science and Engineering VR17 0					1	1 1		Apply linear and poplinear data structures by
Engineering STRUCTU RES THROUGH C CO2 Analyze searching and sorting techniques for effective management of data C CO3 Engineering C CO3 Engineering C CO3 Engineering C CO3 Engineering C CO3 Engineering C CO4 C CO3 Engineering C CO4 C C C C C C C C C		VR17	05					
VR17 05 B.Tech-Computer Science and Engineering DATASTR UCTURES THROUGH CO1 Develop skills to design and analyze simple linear and non-linear data structures for the given real-world problem UCTURES THROUGH CO2 Develop skills to design and analyze simple linear and non-linear data structures for the given real-world problem UCTURES THROUGH UCTURES THROUGH UND Develop skills to design and analyze simple linear and non-linear data structures for the given real-world problem	l l					STRUCTU	CO2	dentitying the appropriate need.
VR17 05 Science and Engineering UCTURES THROUGH C CO3 Effective management of data Design and implement operations of linear and nonlinear data structures CO4 Solve various basic mathematical problems to applying different programming techniques. CO2 Extend adequate programming skills that are needed for competitive coding. Extend adequate programming skills that are needed for competitive coding. CO3 Build applications using modular programming techniques. CO4 Develop skills to design and analyze simple linear and non-linear data structures for the given real-world problem CO2 Implement programs on linear data structures for the given real-world problem Implement programs on linear data structures for the given real-world problem	23				1005172105	RES		Analysis and a state of the state of
Problem Prob		VR17	05			THROUGH	CO3	
VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Scienc		* 10.17	05			C	COS	effective management of data
VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 Science and Engineering VR17 05 B.Tech-Computer Science and Engineering DATASTR UCTURES THROUGH CLAB CO3 Implement programs on linear data structures					1			
VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering DATASTR UCTURES CO2 THROUGH C LAB UCTURES CO2 Implement programs on linear data structures		VD 17	0.5					
VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering UCTURES CO2 Independent programs on linear data structures Independent programs on linear data structures Implement programs on linear data structures Implement programs on linear data structures		VK17	05	1		1 1		and nonlinear data structures
VR17 05 Science and Engineering UCTURES CO2 THROUGH C LAB CO1 applying different programming techniques. Apply various strategies to minimize the time complexity in problem solving. CO2 Extend adequate programming skills that are needed for competitive coding. CO3 Build applications using modular programming techniques. CO4 Develop skills to design and analyze simple linear and non-linear data structures for the given real-world problem UCTURES THROUGH C LAB CO3 Implement programs on linear data structures							CO4	<u> </u>
VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science and Engineering UCTURES THROUGH C LAB DATASTR UCTURES CO2 Implement programs on linear data structures Implement programs on linear data structures								Solve various basic mathematical problems by
VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering UCTURES CO2 DATASTR UCTURES CO2 Implement programs on linear data structures for the given real-world problem Implement programs on linear data structures Implement programs on linear data structures		VR17	05	1			COI	applying different programming techniques.
VR17 05 Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science and Engineeri				Engineering		DD ODI TL		
VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science an				B.Tech-Computer				Apply various strategies to minimize the time
Engineering VR17 05 B.Tech-Computer Science and Engineering B.Tech-Computer S		VR17	05					
VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science and Engineering DATASTR UCTURES CO2 THROUGH CLAB CO3 Implement programs on linear data structures	ایرا			Engineering	100000		CO2	. , , , , , , , , , , , , , , , , , , ,
VR17 05 Science and Engineering B.Tech-Computer Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science and	44				1005172106			Extend adequate programming skills that are
Engineering B.Tech-Computer Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer VR17 05 Science and Engineering B.Tech-Computer Science		VR17	05	•			CO3	needed for competitive sodies
VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering			00	1		THROUGH	COS	needed for competitive coding.
VR17 05 Science and Engineering B.Tech-Computer Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering DATASTR UCTURES CO2 THROUGH C LAB CO3 Implement programs on linear data structures					1	C		D 21 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Engineering VR17 05 Science and Engineering B.Tech-Computer Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering CO1 Develop skills to design and analyze simple linear and non-linear data structures Identify and apply the suitable data structure for the given real-world problem UCTURES CO2 VR17 05 Science and C LAB CO3 Implement programs on linear data structures		Vn 17	O.E					
VR17 05 Science and Engineering VR17 05 Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering CO1 Develop skills to design and analyze simple linear and non-linear data structures Identify and apply the suitable data structure for the given real-world problem CO2 THROUGH CLAB CO3 Implement programs on linear data structures	i	VKI/	US	1		ŀ		programming techniques.
VR17 05 Science and Engineering B.Tech-Computer VR17 05 Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer THROUGH VR17 05 Science and Engineering CO1 linear and non-linear data structures Identify and apply the suitable data structure for the given real-world problem UCTURES CO2 THROUGH C LAB CO3 Implement programs on linear data structures	<u> </u>						CO4	
PRIT OS Science and Engineering UR17 OS Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer C LAB CO3 Engineering Identify and apply the suitable data structure for the given real-world problem UCTURES CO2 THROUGH C LAB CO3				1				
VR17 05 B.Tech-Computer Science and Engineering B.Tech-Computer Science and Engineering B.Tech-Computer CLAB CO2 Identify and apply the suitable data structure for the given real-world problem Implement programs on linear data structures Implement programs on linear data structures CO3		VR17	05	1			COI	linear and non-linear data structures
VR17 05 Science and Engineering B.Tech-Computer VR17 05 Science and VR17 05 Science and C LAB CO3 For the given real-world problem UCTURES CO2 Implement programs on linear data structures				Engineering				
VR17 05 Science and Engineering B.Tech-Computer VR17 05 Science and VR17 05 Science and C LAB CO3 For the given real-world problem UCTURES CO2 Implement programs on linear data structures				B.Tech-Computer]			Identify and apply the suitable data structure
25 Engineering UCTURES CO2 B.Tech-Computer VR17 05 Science and UCTURES CO3 Implement programs on linear data structures		VRI7	05			DATASTR		
VR17 05 Science and THROUGH C LAB CO3 Implement programs on linear data structures				1			CO2	and Brian raw work providing
VR17 05 Science and C LAB CO3	25				1005172121			Implement programs on the second
1 1 2 2 3 3 3 3 3 3 3 3		VR 17	05					implement programs on linear data structures.
cngineenng		* 15.17	UJ	1		CLAB	CO3	
	l			Engineering	J			<u></u>

		0.7	B.Tech-Computer				Perform basic operations on trees.
	VR17	05	Science and			001	i
			Engineering B.Tech-Computer			CO4	Frank and the Control of the Control
	VR17	05	Science and			COI	Implement the variants of overloading with real-time applicability
	'''''	0.5	Engineering			COI	lear-time applicability
			B.Tech-Computer				Design various inheritance techniques using
	VR17	05	Science and				method overloading and overriding
26			Engineering	1005172122	JAVA PROGRAM-	CO2	techniques
20			B.Tech-Computer	1005172122	MING LAB		Implement GUI Applications with modern
	VR17	05	Science and		MING LAD	CO3	tools
			Engineering				
	VD17	0.5	B.Tech-Computer				Design various layouts along with applet
	VR17	05	Science and			CO4	usage
			Engineering		l	CO4	Identify the basis assumed and assistant day
			B.Tech-Computer				Identify the basic concepts and various data model used in database design, design ER
	VRI7	05	Science and			CO1	model for a given problem and formulate SQL
			Engineering				queries.
			D				Apply relational database theory and be able
	VR17	05	B.Tech-Computer Science and		DATABAS E		to describe relational algebra expression, tuple
27	V K 1 /	CO.	Engineering	1005172201	MANAGE		and domain relation expression from queries.
-				1005172201	MENT	CO2	
	1/0.15	0.5	B.Tech-Computer		SYSTEMS		Interpret the use of normalization and
	VR17	05	Science and			CO3	functional dependency, indexing and hashing
			Engineering B.Tech-Computer				technique used in database design.
	VR17	. 05	Science and				Apply and relate the concept of transaction, concurrency control and recovery in database.
	'	05	Engineering			CO4	concurrency control and recovery in database.
			B.Tech-Computer				Articulate the phases of SDLC from
	VR17	05	Science and			COL	requirement gathering phase to design phase.
			Engineering				
			B.Tech-Computer				Apply the appropriate process models for the
	VR17	05	Science and				development of SDLC
	<u> </u>		Engineering		SOFTWAR	CO2	
28		5	B.Tech-Computer	1005172202	E ENGINEE		Design a prototype for a software design and user interface & apply strategies of coding &
	VR17	05	Science and		RING	CO3	testing for the development of software
			Engineering				product
			D.T. J. C.	İ			Apply the knowledge about cost effect
	VR17	05	B.Tech-Computer Science and				estimation and maintenance of software
	VKI	03	Engineering				system and modeling the software project by
<u> </u>						CO4	using CASE tools
			B.Tech-Computer			l .	Apply the concepts of Graphs, Spanning trees
	VR17	05	Science and			CO1	and Analyse dictionary ADT along with
			Engineering		!		hashing mechanisms.
	VR17	05	B.Tech-Computer Science and		ADVANCE		Illustrate priority queues and their operations.
	****	05	Engineering		D DATA	CO2	
29			B.Tech-Computer	1005172203	STRUCTU	- 202	Build efficient Binary Search Trees and
	VR17	05	Science and		RES	CO3	Multiway search trees.
			Engineering				,
			B.Tech-Computer	1			Illustrate tries and issues related to the design
	VR17	05	Science and				of file structures.
			Engineering			CO4	
	,,,,,-		B.Tech-Computer				Apply the concepts of basic functional units
	VR17	05	Science and			CO1	to demonstrate the working of computational
			Engineering	-		<u> </u>	system.
	VR17	05	B.Tech-Computer Science and		COMPLIES		Analyze the design issues in the development
	VKI/	03	Engineering		COMPUTE R	CO2	of processor and other components to articulate improvement in computer design.
30			B.Tech-Computer	1005172204	ORGANIZ	- 002	Design Arithmetic Logic unit by analyzing
	VR17	05	Science and		ATION	CO3	performance issues
			Engineering			335	F
1				1	I		<u> </u>

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[VR17	0.5	B.Tech-Computer Science and		Γ		Compare various Memory organizations.
	VICIT	0.5	Engineering Engineering			CO4	
	VR17	05	B.Tech-Computer Science and Engineering			COI	Outline finite automata and employ finite state machines to solve problems in computing
31	VR17	05	B.Tech-Computer Science and Engineering	1005172205	FORMAL LANGUAG ES AND AUTOMA	CO2	Categorize language classes and grammars with the help of Chomsky Hierarchy and Design, analyze, interpret Regular languages, Expression and grammars
	VR17	05	B.Tech-Computer Science and Engineering		TA THEORY	CO3	Design PDA for solving computational Problems
	VR17	05	B.Tech-Computer Science and Engineering	(4)		CO4	Classify Turing Machines and determine the decidability of computational problems
	VR17	05	B.Tech-Computer Science and Engineering			COI	Categorize and assess various types of operating systems and execution of system calls at each phase.
32	VR17	05	B.Tech-Computer Science and Engineering	1005172206	OPERATIN G	CO2	Analyze various process scheduling and memory management techniques to develop better solutions.
	VR17	05	B.Tech-Computer Science and Engineering		SYSTEMS	CO3	Formulation of dead lock management, resource management techniques and IPC abstraction.
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Ability to perform tasks in Windows/ UNIX / Linux / Android and other environments.
	VR17	05	B.Tech-Computer Science and Engineering			COI	Interpret and Execute the functions of Dictionary using Hashing
33	VR17	05	B.Tech-Computer Science and Engineering	1005172221	ADVANCE D DATA STRUCTU	CO2	Discover and choose appropriate data structures and algorithms, analyzing the ADT's and Libraries in design of algorithms for specific problem
	VR17	05	B.Tech-Computer Science and Engineering		RES LAB	CO3	Estimate the efficiency of various algorithms and proofs of correctness
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Execute appropriate data structures in problem solving for various real time applications
	VR17	05	B.Tech-Computer Science and Engineering		D.1774.D.1.0	COI	Transform an information model into a relational database schema
34	VR17	05	B.Tech-Computer Science and Engineering	1005172222	DATABAS E MANAGE MENT	CO2	Apply Joins and Correlation operations on Sub-Queries
34	VR17	05	B.Tech-Computer Science and Engineering	1003172222	SYSTEMS LAB	CO3	Formulate query using SQL.
	VR17	05	B.Tech-Computer Science and Engineering		Ť	CO4	Implement pl/sql programs
	VR17	05	B.Tech-Computer Science and Engineering		INDUSTRI	COI	Experiment through interaction, working methods and employment practices.
35	VR17	05	B.Tech-Computer Science and Engineering	1005172231	AL VISIT / ONLINE CERTIFIC		Interact and learn from experts in the industry.
33	VR17	05	B.Tech-Computer Science and Engineering	1003172231	ATION COURSE FROM	CO3	Connect openly on a global scale, with global learners and instructors.

		0.5	B.Tech-Computer	1	NPTEL		Make use of multimedia platform for self
- 1	VR17	05	Science and Engineering			CO4	learning
\dashv	-		B.Tech-Computer	-		CU4	Compare different types of language
	VR17	05	Science and			COI	processors and design a lexical analyzer.
ŀ			Engineering		-		Educational at 11 data at 11 dec
	VR17	05	B.Tech-Computer Science and		1		Identify the similarities and differences among various parsing techniques and grammar
- 1	VKI/	03		1		CO2	transformation techniques
36			Engineering	1005173101	COMPILE -	<u>C02</u>	<u> </u>
30			B.Tech-Computer	1005175101	R DESIGN		Analyze the role of a semantic analyzer and
	VR17	05	Science and			CO3	gain knowledge on the procedure for generating Syntax directed translation,
			Engineering				synthesized and inherited attributes.
-			B.Tech-Computer				Evaluate the effectiveness of optimization and
	VR17	05	Science and				differentiates machine dependent and machine
	VK17	O.J	Engineering			CO4	independent optimizations.
			B.Tech-Computer			C0+	Install Python IDE and run basic Python
	VR17	05	Science and			CO1	scripts and interpret basic principles of
	'	0.5	Engineering			Ψ.	Python programming language.
			B.Tech-Computer		. h		Apply knowledge of Python constructs for
	VR17	05	Science and				developing programs/applications.
		-	Engineering		PYTHON	CO2	
37			B.Tech-Computer	1005173102	PROGRAM		Import packages to the current working
	VR17	05	Science and		MING	CO3	environment and create user defined modules.
			Engineering				
			B.Tech-Computer	1		•	Implement object oriented concepts and
	VR17	05	Science and				handle exceptions and files
			Engineering			CO4	
			B.Tech-Computer				Identify stages in building a Data Warehouse
	VR17	05	Science and			CO1	and challenges in Data mining
			Engineering	!			
							Access raw input data and apply data pre-
	l		B.Tech-Computer				processing techniques, generalization
	VR17	05	Science and	1	DATA		techniques and data characterization
			Engineering		MINING		techniques to provide suitable input for a
38				1005173103	TECHNIQ	CO2	range of data mining algorithms Analyze data mining techniques like
			B.Tech-Computer		UES		classification and Association rules that can
	VR17	05	Science and			CO3	be applied to data objects and to find the
			Engineering]		interesting patterns.
	\vdash		B.Tech-Computer	1			Solve real world problems by using the
	VR17	05	Science and				various Clustering methods
	' ' '	05	Engineering			CO4	Tallogo Glastering mouleage
			B.Tech-Computer				Analyze the architecture and features of
	VR17	05	Science and	1		COI	UNIX Operating System
	''''		Engineering				
			B.Tech-Computer	1			Elaborate various file processing commands
	VR17	05	Science and	1	UNIX AND		used in UNIX.
20			Engineering	1005133104	SHELL	CO2	
39			B.Tech-Computer	1005173104	PROGRAM		Build Regular expressions for pattern
	VR17	05	Science and	1	MING	CO3	matching and apply them to various filters for
			Engineering				a specific task.
			B.Tech-Computer	7	2.		Improve usage of various processes and
	VR17	05	Science and	1	1	1	sockets in real-time applications
			Engineering			CO4	
			B.Tech-Computer				Analyze time complexity of algorithms usin
	VR17	05	Science and			COI	asymptotic notations
			Engineering		DESIGN		
			B.Tech-Computer		AND		Apply the divide-and-conquer and dynamic
	VR17	05	Science and		ANALYSIS		programming paradigms.
40			Engineering	1005173105	1	CO2	
~	-		B.Tech-Computer	1	ALGORIT		Compare the greedy and random algorithm
	VR17	05	Science and Engineering		HMS	CO3	paradigms to identify the design situations it randomization.
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	VD 15	0.5	B.Tech-Computer				Create optimized solutions for state space tree
l	VR17	05	Science and			CO4	algorithms using backtracking and branch-and
			Engineering			CO4	bound techniques.
	VRI7	05	B.Tech-Computer Science and			CO1	Relate Ethical Human Values
	VKI	0.5	Engineering			COI	
- 1			B.Tech-Computer		}		Apply Engineering knowledge for societal ben
	VR17	05	Science and		Professiona		Appry Engineering knowledge for societal ben-
	*****	05	Engineering		l Ethics &	CO2	
41			B.Tech-Computer	1099172103	Human		Elaborate responsibility for Safety, Risk & righ
- 1	VR17	05	Science and		Values	CO3	and the supplied that the supplied to the supp
			Engineering				
			B.Tech-Computer				Outline the various Current Global Issues
	VR17	05	Science and				
			Engineering	ļ		CO4	
		•	B.Tech-Computer				Install R Studio and Understand working with
	VR17	05	Science and			CO1	R
			Engineering				
			B.Tech-Computer				Apply the data mining techniques with varied
	VR17	05	Science and		DATA		inputs for different parameters
			Engineering		MINING	CO2	
42	i		B.Tech-Computer	1005173121	WITH R		Understand the Datasets and Data pre
	VR17	05	Science and		LAB	CO3	processing and implement various graphs
			Engineering				using R Software
	ĺ		B.Tech-Computer				Demonstrate the working of Algorithms for
	VR17	05	Science and	ļ			data mining tasks such as association rule
			Engineering			001	mining classification, clustering and
						CO4	regression.
	VR17	05	B.Tech-Computer			GO1	Analyze the given Python program to identify
	VKII	US	Science and			CO1	bugs and to rectify it.
			Engineering B.Tech-Computer				Apply knowledge of Python constructs for
	VR17	05	Science and			1	developing programs/applications.
	*****	UJ	Engineering		PYTHON	CO2	developing programs/applications.
43			B.Tech-Computer	1005173122	PROGRAM		Implement object oriented concepts and
	VR17	05	Science and	1	MING LAB	CO3	exception handling mechanism.
	````	05	Engineering		1	005	exception numbring mechanism.
			B.Tech-Computer	1			Use Numpy and pandas libraries for handling
	VR17	05	Science and		1		data.
			Engineering			CO4	
			B.Tech-Computer	i			Implement various process scheduling and
	VR17	05	Science and	]		COI	memory management techniques.
			Engineering	1	ODED ATTA		
			B.Tech-Computer	]	OPERATIN		Implement various page replacement
	VR17	05	Science and		G SYSTEMS		mechanisms.
44			Engineering	1005173123		CO2	
77			B.Tech-Computer	1005175125	COMPILE		Design lexical Analyzer for given language
	VR17	05	Science and		R DESIGN	I CO2	using C and Lex Tools.
			Engineering	_	LAB		
			B.Tech-Computer		LAB		Implement various parsers.
	VR17	05	Science and		1		
			Engineering		<u> </u>	CO4	
			B.Tech-Computer		1		Analyze the principles of layered approach
	VR17	05	Science and		1	COI	select most appropriate architecture for any
			Engineering	-			applications
			B.Tech-Computer				Identify the functionality of physical layer and
	VR17	05	Science and		COMPUTE		analyze the contents in a given data link layer
45		<u> </u>	Engineering	1005173201	R	CO2	protocols, based on the layer concept.
~			B.Tech-Computer		NETWOR		Specify and identify deficiencies in existing
	VR17	05	Science and		KS	CO3	protocols, and then go onto formulate new
			Engineering	_			and better protocol.
			B.Tech-Computer				Design the topological and routing strategies
1	VR17	05	Science and				for an IP based networking infrastructure
			Engineering		1	CO4	

VR17   OS   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   Engineering   Science and   En		$ \tau$		B.Tech-Computer				Analyze a web page and identify its elements
VR17   OS   Science and Engineering   1005173202   VR17   OS   Science and Engineering   1005173202   VR17   OS   Science and Engineering   1005173202   VR17   OS   Science and Engineering   1005173203   VR17   OS   Science and Engineering   1005173203   VR17   OS   Science and Engineering   1005173203   VR17   OS   Science and Engineering   1005173203   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17   OS   Science and Engineering   1005173204   VR17		VR17	05	Science and			COI	and attributes to create web pages using
VR17   O5   Science and Engineering Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering VR17   O5   Science and Engineering Engineering Engineering VR17   O5   Science and Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engineering Engi	i  -					-		
Part				•				
VR17		VRI7	05					design dynamic web pages
VR17   05   Science and Engineering   VR17   05   Science and Engineering   VR17   05   Science and Engineering   VR17   05   Science and Engineering   VR17   05   Science and Engineering   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17				Engineering		-	CO2	
VR17 05 Science and Engineering VR17 05 Science and Engineering Problems using PriParal AIAXX  VR17 05 B.Tech-Computer Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science and Engineering Private AIAXX  VR17 05 Science AIAXX  VR17 05 Science AIAXX  VR17 05 Science AIAXX  VR17 05 Science AIAXX  VR17 05 Science AIAXX  VR17 05 Science AIAXX  VR17 05 Science AIAXX  VR17 05 Science AIAXX  VR17 05 Science AIAXX  VR17 05 Science AIAXX  VR17 05 Science AIAXX  VR17 05 Science AIAXX  VR17 05 Scienc	46	1		B Tech-Computer	1005173202			
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VR17   05   B.Tech-Computer Science and Engineering   S.Tech-Computer	i 1	VIXI.	0.5				COS	interactive web applications using PHP and
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VR17   O5   B.Tech-Computer Science and Engineering   CO1   Identify Methods in Al that may be suited to solve a given problem and Game Playing   CO2   Identify Methods in Al that may be suited to solve a given problem and Game Playing   CO3   Identify Methods in Al that may be suited to solve a given problem and Game Playing   CO2   Identify Methods in Al that may be suited to solve a given problem and Game Playing   CO3   Identify Methods in Al that may be suited to solve a given problem and Game Playing   CO3   Identify Methods in Al that may be suited to solve a given problem and Game Playing   CO3   Identify Methods in Al that may be suited to solve a given problem and Game Playing   CO3   Identify Methods in Al that may be suited to solve a given problem and Game Playing   CO3   Identify Methods in Al that may be suited to solve a given problem and Game Playing   CO3   Identify Methods in Al that may be suited to solve a given problem and Game Playing   CO3   Identify Methods in Al that may be suited to solve a given problem and Game Playing   CO3   Identify Methods in Al that may be suited to solve a given problem and Game Playing   CO3   Identify Methods in Al that may be suited to solve a given problem and Game Playing   CO3   Identify Methods in Al that may be suited to solve a given problem and Game Playing   CO3   Analyze the basic issues of different types of knowledge representation techniques to build intelligent system   Apply gribabilistic and fuzzy models to solve problems with uncertainty.   CO4   Examine the fundamentals of gray scale and color image processing.   Apply different transforms and compression methods on image for image processing applications.   Apply different transforms and compression methods on image for image processing.   Apply different transforms and compression methods on image for image processing.   CO3   Apply different transforms and compression methods on image for image processing.   CO4   CO5   CO6   CO6   CO6   CO7   CO7   CO7   CO7   CO7   CO7   CO7   CO7		, , , ,	0.5				COS	Chill Houseville
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VR17   OS   Science and Engineering   CO4   Identify Methods in AI that may be suited to solve a given problem and Game Playing   Demonstrate AI search algorithms and formalizations on real world problems   CO2   Identify Methods in AI that may be suited to solve a given problem and Game Playing   Demonstrate AI search algorithms and formalizations on real world problems   CO2   Intelligent system   Demonstrate AI search algorithms and formalizations on real world problems   CO3   Analyze the basic issues of different types of knowledge representation techniques to build intelligent system   Apply probabilistic and fuzzy models to solve problems with uncertainty.   CO4   Examine the fundamentals of gray scale and color image processing.   Examine the fundamentals of gray scale and color image processing.   CO2   Examine the fundamentals of gray scale and color image processing.   CO3   Apply different transforms and compression methods on image for image processing applications.   Apply different transforms and compression methods on image for image processing applications.   Apply different transforms and contract information from the image in terms of spatial filtering, frequency filtering, restoration and segmentation.   CO3   CO4   Co4   Co4   Co5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO5   CO		VD17	ns.					Apply Civil tools for various case studies
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Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer VR17  O5  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering		VRI7	05			NG	CO3	1 -
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VR17 05 Science and Engineering  VR17 05 Science and Engineering  VR17 05 Science and Engineering  B.Tech-Computer Science and Engineering  VR17 05 Science and Engineering  VR17 05 Science and Engineering  VR17 05 Science and Engineering  VR17 05 Science and Engineering  VR17 05 Science and Engineering  B.Tech-Computer Science and Engineering  VR17 05 Science and Engineering  B.Tech-Computer Science and Engineering  Define the unique design problems and challenges of real time systems					-			
Engineering  VR17 05 Science and Engineering  VR17 05 Science and Engineering  VR17 05 Science and Engineering  VR17 05 Science and Engineering  VR17 05 Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering  Define the unique design problems and challenges of real time systems			0.5		1			
VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering  B.Tech-Computer Science and Engineering  B.Tech-Computer Science and Engineering CO1 SYSTEMS  EMBEDDE CO2  Apply synchronization tools in various real time scenarios  CO3 time scenarios  Define the unique design problems and challenges of real time systems		VRI7	U5				00.	mutti resolution processing.
VR17 05 Science and Engineering  VR17 05 B.Tech-Computer Science and Engineering  VR17 05 B.Tech-Computer Science and Engineering  VR17 05 Science and Engineering  VR17 05 Science and Engineering  VR17 05 Science and Engineering  B.Tech-Computer Science and Engineering  VR17 05 Science and Engineering  B.Tech-Computer Science and Engineering  CO1 8051 microcontroller architecture  Identify the unique characteristics of real time systems  CO2 Apply synchronization tools in various real time scenarios  CO3 time scenarios  Define the unique design problems and challenges of real time systems	<u> </u>				-	-	LU4	
Engineering   B.Tech-Computer   Science and   Engineering   B.Tech-Computer   Science and   Engineering   B.Tech-Computer   Science and   Engineering   B.Tech-Computer   Science and   Engineering   B.Tech-Computer   Science and   Engineering   B.Tech-Computer   Science and   Engineering   B.Tech-Computer   Define the unique design problems and   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Code   Co	7	,,,,,,						
VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 B.Tech-Computer Science and Engineering B.Tech-Computer VR17 05 Science and Engineering  B.Tech-Computer VR17 05 Science and CO3 Identify the unique characteristics of real time systems  CO2 Apply synchronization tools in various real time scenarios  Define the unique design problems and challenges of real time systems		VR17	U5				COL	8031 microcontroller architecture
VR17 05 Science and Engineering VR17 05 B.Tech-Computer Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Engineering VR17 05 Science and Challenges of real time systems				<del></del>				
Engineering   B.Tech-Computer   Science and   B.Tech-Computer   Systems   CO2   Apply synchronization tools in various real   CO3   time scenarios   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3   CO3			_	1				·
Systems   CO2   CO2		VR17	05	1		EMBEDDE		systems
VR17 05 Science and Engineering  B.Tech-Computer SYSTEMS CO3 time scenarios  CO3 time scenarios  Define the unique design problems and challenges of real time systems	50	<u></u>			1005173205	1	CO2	
VR17 05 Science and Engineering  B.Tech-Computer  VR17 05 Science and CO3 time scenarios  Define the unique design problems and challenges of real time systems	"		1		1.555175205	_		1 ** * *
VR17 05 Science and Define the unique design problems and challenges of real time systems		VR17	05				CO3	time scenarios
VR17 05 Science and challenges of real time systems				<del></del>	_			
Engineering   CO4		VR17	05	Science and				challenges of real time systems
	L			Engineering			C04	

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	VR17	05	B.Tech-Computer Science and Engineering		MICROPR OCESSOR	COI	Understand the concepts of architecture, memory organization of Intel 8086 microprocessor and Intel 8051 microcontrollers.
51	VR17	05	B.Tech-Computer Science and Engineering	1004173208	S & MICROCO	CO2	Demonstrate the concepts of addressing modes, instruction set of Intel 8086 microprocessor and Intel 8051
	VR17	05	B.Tech-Computer Science and Engineering		NTROLLE RS-A	CO3	Write assembly language programs for simple problem statements
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Design an interface between peripheral chips & processors and write programs for data transfer
	VR17	05	B.Tech-Computer Science and Engineering			CO1	Identify various robot configuration and components
52	VR17	05	B.Tech-Computer Science and Engineering	1003173203	DODOTICS	CO2	Select Appropriate actuators and sensors for a robot based on specific applications
	VR17	05	B.Tech-Computer Science and Engineering	1003173203	ROBOTICS	CO3	Analyze kinematic and dynamic analysis for simple serial kinematic chains
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Define trajectory planning for a manipulator by avoiding obstacles
	VR17	05	B.Tech-Computer Science and Engineering			COI	Connect openly on a global scale, with global learners and instructors.
53	VR17	05	B.Tech-Computer Science and Engineering			CO2	Develop high quality learning using multimedia platform.
33	VR17	05	B.Tech-Computer Science and Engineering	1005173291	MOOCS	CO3	Self assessment of their performance and learning process.
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Develop a life long learning culture and updating the knowledge according with emerging trends.
	VR17	05	B.Tech-Computer Science and Engineering			COI	Interpret the various aspects of IPR
E4 1	VR17	05	B.Tech-Computer Science and Engineering		IPR &	CO2	Conclude importance of Copyrights, Trademarks & Trade Secrets
54	VRI7	05	B.Tech-Computer Science and Engineering	1099173101	PATENTS	CO3	Obtain Patent Rights for New Innovations
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Elaborate on Privacy Issues
	VRI7	05	B.Tech-Computer Science and Engineering			COI	Establish the communication between peer -to peer systems
	VR17	05	B.Tech-Computer Science and Engineering		COMPUTE R	CO2	Implement the different protocols
55	VRI7	05	B.Tech-Computer Science and Engineering	1005173221	NETWOR KS LAB	CO3	Implement and compare the various routing algorithms
	VR17	05	B.Tech-Computer Science and Engineering			COA	Demonstrate program using sockets
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Understand the UML notation to create effective and efficient system designs

1 1				1			
			B.Tech-Computer				Model Static view of a System using Use case
	VR17	05	Science and		UNIFIED		Diagram
56			Engineering	1005173222	MODELIN	CO2	
			B.Tech-Computer	1005175222	GLAB		Model Dynamic View of a system using UML
	VRI7	05	Science and		0 2712	CO3	diagram
			Engineering				
1			B.Tech-Computer		[		Represent user and Programmatic interactions
	VR17	05	Science and		1		using UML
			Engineering			CO4	
			B.Tech-Computer				Create and design a static web pages using
	VR17	05	Science and			CO1	HTML and CSS
			Engineering				7.
'			B.Tech-Computer		!		Design dynamic web applications using
	VRI7	05	Science and		WEB		JavaScript and explain how XML provides a
57			Engineering	1005173223	TECHNOL	CO2	standard method to access information
,			B.Tech-Computer	1005175225	OGIES		Demonstrate database connectivity for
	VR17	05	Science and		LAB	CO3	developing web applications using PHP
			Engineering				
			B.Tech-Computer				Create a dynamic, web based applications
	VR17	05	Science and				using PERL
<u> </u>			Engineering			CO4	
							Apply the software engineering principles in
			B.Tech-Computer				planning, formulating an innovative design/
	VR17	05	Science and			601	approach and computing the requirements
	VKI7	UJ	Engineering			CO1	appropriate to chosen topic within the context
			Engineering		1		of legal, societal and environment constraint.
ĺ							
			D. Took Commuter	1	INIDIIOTE		Perform individually as well as in a team,
	VR17	05	B.Tech-Computer Science and		INDUSTR		accepting responsibility, taking initiative, and
58	VK17	03	1	1005173041	Y		providing leadership, necessary to ensure
1 26			Engineering	1005173241	ORIENTE	CO2	project success
	"-		D Took Commutes	1	D MINI PROJECT		Use formal and informal communications
	VR17	05	B.Tech-Computer Science and		PROJECT	600	with team members and guide, make
	VKI/	U.J	1			CO3	presentations and prepare technical document.
			Engineering				
			B.Tech-Computer	1	ł		Develop/implement the solutions with
	VR17	05	Science and				appropriate techniques, resources and
ĺ	VICE?	03	Engineering				contemporary tools for social relevant
<u></u>			Engineering			CO4	issues/problems
1			B.Tech-Computer				Identify basic security attacks and services
	VR17	05	Science and			CO1	
			Engineering		1		
			B.Tech-Computer		CRYPTOG		Analyze the strengths and weaknesses of
	VR17	05	Science and		RAPHY		various symmetric encryption algorithms.
59			Engineering	1005174101	AND	CO2	
-			B.Tech-Computer	1003174101	NETWOR		Apply the concepts of number theory and
	VR17	05	Science and		K	CO3	public key algorithms in cryptography
			Engineering		SECURITY		
			B.Tech-Computer	1			Classify various cryptographic protocols, hash
	VRI7	05	Science and	1			functions, digital signature schemes
<u></u>			Engineering			CO4	
			B.Tech-Computer				Analyze the Demand, Price and Cost.
	VR17	05	Science and			CO1	
			Engineering		MANAGE		
			B.Tech-Computer		RIAL		Identify the Nature of different markets to
ĺ	VR17	05	Science and		ECONOMI		determine Price Output for different Business
60			Engineering	1000173106	CS AND	CO2	Units
00			B.Tech-Computer	1099172106	FINANCIA		Build financial statements
	VR17	05	Science and		L	CO3	
			Engineering		ANALYSIS		
			B.Tech-Computer	1			Evaluate investment project proposals
	VR17	05	Science and				halas krakonen
L			Engineering	1		CO4	
							<u> </u>

	VR17	05	B.Tech-Computer Science and Engineering			CO1	Recognize the characteristics of machine learning and differentiate machine learning algorithms into supervised, unsupervised and semi supervised.
61	VR17	05	B.Tech-Computer Science and Engineering	1005174102	MACHINE LEARNIN	CO2	Solve classification problems using concept learning and decision trees
	VR17	05	B.Tech-Computer Science and Engineering		G	CO3	Interpret of Dimensionality Reduction and vector machine algorithms
	VR17	05	B.Tech-Computer Science and Engineering		==	CO4	Identify the concept behind neural networks for learning non-linear functions
	VR17	05	B.Tech-Computer Science and Engineering			COI	Analyze Hadoop Architecture
	VR17	05	B.Tech-Computer Science and Engineering		BIG DATA	CO2	Acquire knowledge on Map Reduce Framework and implement various applications.
62	VR17	05	B.Tech-Computer Science and Engineering	1005174103	ANALYTI CS	CO3	Develop applications using java language and implement programs by making use of hadoop i/o.
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Implement Big data activities using PIG and HIVE.
	VR17	05	B.Tech-Computer Science and Engineering			COI	Develop new applications in Manets and WSN.
63	VR17	05	B.Tech-Computer Science and Engineering	1005174104	MOBILE AD-HOC	CO2	Understand the need for security and the challenges and also the role of cross layer design in enhancing the network performance
03	VR17	05	B.Tech-Computer Science and Engineering	1005174104	NETWOR KS	CO3	Develop algorithms/protocols for Manets and WSN.
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Create new technical issue related to these new thrust areas and come up with a solution(s).
	VRI7	05	B.Tech-Computer Science and Engineering			COI	Infer basic concepts and issues of software project management
64	VR17	05	B.Tech-Computer Science and Engineering		SOFTWAR E	CO2	Conduct activities necessary to successfully complete and close the Software projects
64	VR17	05	B.Tech-Computer Science and Engineering	1005174105	PROJECT MANAGE MENT	CO3	Estimate the effort required for a software project development and identify software risks.
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Develop the skills for tracking and controlling software deliverables
	VR17	05	B.Tech-Computer Science and Engineering			CO1	Contrast the Architecture, protocols and applications of IoT.
	VRI7	05	B.Tech-Computer Science and Engineering	100445	INTERNET OF THINGS &	CO2	Analyse the communication protocols and standards used in Io
65	VR17	05	B.Tech-Computer Science and Engineering	1004174105	ITS APPLICAT IONS	CO3	Design the simple IoT applications to monitor or control IoT devices using simulation or hardware
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Implement the real time IoT applications.
	VR17	05	B.Tech-Computer Science and Engineering			COI	Usage of general software architecture of programs to create 2D&3D computer graphics.

[	1		B.Tech-Computer	1	Г		Create 2D graphics through hardware system
	VR17	05	Science and				architecture for computer graphics
66			Engineering	1010170001	COMPUTE	CO2	, , ,
00			B.Tech-Computer	1012172201	R - GRAPHICS		Implementing procedures through recall of
	VR17	05	Science and		OKAPHICS	CO3	graphics pipeline, frame buffers, and graphic
-			Engineering				accelerators / co processors.
			B.Tech-Computer		lΓ		Estimate models for lighting/shading Color,
	VR17	05	Science and				ambient light, distant and light with sources,
			Engineering			CO4	Phong reflection model and shading
			B.Tech-Computer		87		Apply the knowledge of cloud technology to
	VR17	05	Science and			COI	demonstrate the working principles of cloud
		59	Engineering				
	1		B.Tech-Computer		1 !		Analyse cloud services extended by various
	VR17	05	Science and		CLOUD		cloud providers to build a cloud
67			Engineering	1005174106	COMPUTI	CO2	
0,			B.Tech-Computer	1005177100	NG		Identify emerging cloud programming
	VR17	05	Science and			CO3	paradigms and its software environments
			Engineering	1	1 1		
			B.Tech-Computer				Design and develop the backup strategies for
	VRI7	05	Science and		1		cloud data based on features.
			Engineering			CO4	
			B.Tech-Computer	ļ			Reproduce models to effectively test the
	VR17	05	Science and		1	COI	applications.
			Engineering				
	1	0.7	B.Tech-Computer		SOFTWAR		Apply techniques of transaction flow testing
	VR17	05	Science and		E	G04	and dataflow testing in various programs.
68			Engineering	1012173203	TESTING	CO2	m s
	1/017	0.5	B.Tech-Computer		METHOD	003	Test the software using domain testing and
	VR17	05	Science and		OLOGIES	CO3	Logic Based Testing
			Engineering	-	1		Analysis and Groupes to the forward
	VR17	05	B.Tech-Computer Science and				Apply various software testing tools for real world applications
	VK17	03	Engineering			CO4	world applications
┝	<del>                                     </del>		B.Tech-Computer		1	CO4	Evaluate different encryption algorithms on
	VR17	05	Science and			CO1	number theory
İ	' ' '	05	Engineering		1	COI	indinoct dicory
1			B.Tech-Computer	1	CRYPTOG		Implement Symmetric cryptographic
	VR17	05	Science and		RAPHY		algorithms
	''`'	0,5	Engineering		AND	CO2	
69			B.Tech-Computer	1005174121	NETWOR		Implement Asymmetric cryptographic
	VR17	05	Science and		K	CO3	algorithms
1	'		Engineering		SECURITY		
			B.Tech-Computer	1	LAB		Implement Various Cryptographic Hash
	VR17	05	Science and				algorithms
1			Engineering		1	CO4	
			B.Tech-Computer	1			Implement programs by making use of
	VR17	05	Science and			COI	hadoop i/o.
			Engineering				
			B.Tech-Computer	7			Apply data modeling techniques to large data
	VR17	05	Science and		DICDATA		sets
70			Engineering	1005174122	BIGDATA	CO2	
/0			B.Tech-Computer	7 1003174122	CS LAB		Create applications for Big Data analytics
	VR17	05	Science and		Carvo	CO3	
			Engineering	_	1		
			B.Tech-Computer				Develop map reduce programs to solve real
	VR17	05	Science and				world problems which deals with big data
			Engineering			CO4	
			B.Tech-Computer				Choose functional/operational aspects of
	VR17	05	Science and	1		COI	crypto currency ecosystem.
			Engineering	╛	1		
			B.Tech-Computer		FUNDAME	1	Make use of emerging abstract models for
					4		· ·
	VR17	05	Science and Engineering		NTALS OF BLOCK	CO2	Blockchain Technology

					_		
′′	VR17	05	B.Tech-Computer Science and	1005174201	CHAIN TECHNOL	CO3	Identify major research challenges and technical gaps existing in between theory and
			Engineering		OGY		practice in cryptocurrency domain.
	VDIE	0.5	B.Tech-Computer				Build fundamental characteristics of block
	VR17	05	Science and Engineering		1	CO4	chain using bit coin.
			B.Tech-Computer			CO4	Illustrate the basic elements and concepts
	VR17	05	Science and			COI	related to distributed system technologies
i 1		35	Engineering	1			,
			B.Tech-Computer		Ī		Tell the characteristics of distributed systems
	VR17	05	Science and		DISTRIBU		for designing architectural models
72			Engineering	1005174203	TED -	CO2	
			B.Tech-Computer	1000111200	SYSTEMS		Enumerate the features and applications of
	VR17	05	Science and			CO3	important standard protocols which are used
			Engineering		i		in the distributed system  Interpret inter-process communication in a
	VRI7	05	B.Tech-Computer Science and				distributed system
	VKI	05	Engineering			CO4	distributed system
			Liighteering				Formulate a physical problem into a
			B.Tech-Computer				mathematical model using linear
	VR17	05	Science and			COI	programming problem and solve LPP using
			Engineering				appropriate techniques like simplex method
							and its extensions
			B.Tech-Computer		OPTIMIZA		Build and Solve Transportation and
	VR17	05	Science and	1005151601	TION	G00	Assignment models
73			Engineering	1005174204	TECHNIQ	CO2	Interpret how a task in a machine has to be
			B.Tech-Computer	1	UES		processed in a particular order using
	VR17	05	Science and		1	CO3	sequencing Models and solve two-person zero
1			Engineering		l		sum games
			B.Tech-Computer	i			Illustrate the use of Simple Inventory Models
	VR17	05	Science and				in Practical Situations
			Engineering			CO4	
			B.Tech-Computer			<b></b>	Build, revise and execute concurrent and
1	VRI7	05	Science and			COI	parallel algorithms.
	$\vdash$		Engineering B.Tech-Computer	-	CONCURR		Interpret the working of multi processor, multi
1	VR17	05	Science and		ENT AND		core architectures and illustrating the work to
	1 1117	05	Engineering		PARALLE	CO2	avoid race condition.
74			B.Tech-Computer	1005174205	L		Solve problems requiring both semaphores
	VR17	05	Science and		PROGRAM	CO3	and events as part of the solution
			Engineering		MING		
1			B.Tech-Computer	1			Implement different server architectures
	VR17	05	Science and	1			(topologies), e.g. client server, peer-to-peer,
_			Engineering			CO4	agent systems, grid architectures
	UD.17	0.5	B.Tech-Computer			CO.	Apply domain knowledge during the course of
1	VR17	05	Science and Engineering		l .	COI	internship
	-		B.Tech-Computer	1		<u> </u>	Develop/implement the solutions with
	VR17	05	Science and				appropriate techniques, resources and
	' ' ' '	"	Engineering		-	CO2	contemporary tools.
				1	INFFEDNICH		Work independently and in a collaboration in
75	VR17	05	B.Tech-Computer Science and	1005174251	INTERNSH IP	CO3	multidisciplinary environment and to allocate
	\VK1/	05	Engineering		1 11	503	time effectively and manage to complete the
	<u></u>		Linguiscotting	1			work allotted within stipulated time.
							Exhibit integrity and ethical behaviour while
	l un:	0.5	B.Tech-Computer				carrying out the internship and for the
	VR17	05	Science and				preparation of internship report and to demonstrate effective oral and written
			Engineering			CO4	communication skills
	1	1	_l	1		1 004	Communication aking

	VR17	05	B.Tech-Computer Science and Engineering			CO1	Carryout literature survey, and choose a relevant topic reported in recent IEEE/CSI/ACM/ conference publications / transactions in the domain of computer science and engineering.
76	VR17	05	B.Tech-Computer Science and Engineering	1005174251	TECHNIC AL SEMINAR	CO2	Simulate and analyze the results reported in the chosen paper for seminar topic.
	VR17	05	B.Tech-Computer Science and Engineering			CO3	Communicate effectively before the expert panel and develop technical reports.
:	VR17	05	B.Tech-Computer Science and Engineering			CO4	Respond to the queries raised by the evaluation committee and audience
	VR17	05	B.Tech-Computer Science and Engineering			COI	Demonstrate knowledge in the program domain.
77	VR17	05	B.Tech-Computer Science and Engineering	1005174261	COMPREH ENSIVE	CO2	Present views cogently and precisely.
''	VR17	05	B.Tech-Computer Science and Engineering	1003174201	VIVA	CO3	Exhibit professional etiquette suitable for career progression.
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Apply computer science theory and software development fundamentals to produce computing-based solutions.
	VR17	05	B.Tech-Computer Science and Engineering			COI	Apply the software engineering principles in planning, formulating an innovative design/approach and computing the requirements appropriate to chosen topic within the context of legal, societal and environment constraint.
77	VR17	05	B.Tech-Computer Science and Engineering	1005174231	MAIN PROJECT	CO2	Ability to perform individually as well as in a team, accepting responsibility, taking initiative, and providing leadership, necessary to ensure project success
	VR17	05	B.Tech-Computer Science and Engineering		:	CO3	Ability to use formal and informal communications with team members and guide, make presentations and prepare technical document.
	VR17	05	B.Tech-Computer Science and Engineering			CO4	Develop/implement the solutions with appropriate techniques, resources and contemporary tools.





			VIGNAN'S	INSTITUTE O	F INFORMATION	TECHN	IOLOGY(A)
			1	TECH. INFO	RMATION TECHN	OLOG	Y
				CC	OURSE OUTCOME	S	
S.No	Regulat	Programme	Programme	Course Code	Course Name	CO	Course Outcome: After the completion of
	ion	Code	Name	Course Code	Course (value		the course student will be able to
	VR17	12	B.Tech-			COI	Enhance English Language by relating the
			Information B.Tech-	- 1	-		ideas of eminent personalities.  Articulate the technological advancements
١. ا	VR17	12	Information			CO2	fluently.
1	VR17	12	B.Tech-	1000171101	English –I		Inculcate the art of thinking and writing clearly
	VKI7	1.2	Information		1	CO3	and logically.
!	VR17	12	B.Tech-		ĺ	CO4	Enact various themes through team work and
<u> </u>	l i		Information B.Tech-				learn the usage of vocabulary through
	VR17	12	Information	1		CO1	Solve the first and higher order linear differential equations.
	11015	- 10	B.Tech-	1			Estimate extrema and series expansions of
2	VR17	12	Information	1000171102	Engineering	CO2	functions of several variables.
1	VR17	12	B.Tech-	1000171102	Mathematics -I	CO3	Interpret area and volume using double integral
			Information		]		and triple integral.
	VR17	12	B.Tech- Information			CO4	Evaluate of solution of Ordinary differential
$\vdash$			B.Tech-			_	equations by using Laplace Transform  Estimate numerical solution of non Linear
	VR17	12	Information	1		CO1	equation.
	VR17	12	B.Tech-	1			Construct Interpolating polynomial for the
3	VKI7	12	Information	1000171103	Engineering	CO2	given data.
	VR17	12	B.Tech-	1000171103	Mathematics – II	CO3	Calculate Numerical Solution of ODE and
			Information	-			Numerical Integration.
	VR17	12	B.Tech- Information			CO4	Evaluate Fourier series and Fourier transforms for functions.
$\vdash$			B.Tech-				Write compile and debug Programs in C
	VR17	12	Information			CO1	language
	VR17	12	B.Tech-	1	Computer Programming	CO2	
4		12	Information	1000171105		CO2	Use operators, data types and write programs
	VR17	12	B.Tech- Information		using C	CO3	Select the best loop construct for a given
1		<u> </u>	B.Tech-	1			problem  Design and implement C programs
	VR17	12	Information	ļ		CO4	besign and implement C programs
	VR17	12	B.Tech-			COI	Understand the use of drawing instruments to
	VIC17	12	Information	1			construct the polygons and curves
	VR17	12	B.Tech-			CO2	Draw isometric views of simple objects
5			Information B.Tech-	1000171106	Engineering Drawing		
	VR17	12	Information		Drawing	CO3	Learn the principle of orthographic projections.  Draw Orthographic projections of points, lines.
	VD17	12	B.Tech-	1			Draw the various types of planes and solids its
	VR17	12	Information	<u> </u>		CO4	views in different Positions
	VR17	12	B.Tech-			CO1	Describe the wave phenomena of light and
		1-	Information	4			working principle of optical instruments.
1	VR17	12	B.Tech- Information			CO2	Apply the knowledge of basic quantum
6		<del>                                     </del>	B.Tech-	1000171107	APPLIEDPHYSI		mechanics to understand wave equation.  Understanding the basic knowledge of free
"	VR17	12	Information	1000171107	CS	CO3	electon theory of materials.
			B.Tech-	1			Make use of the basic concepts of energy
	VRI7	12	Information			CO4	bands in crystalline solids to understand
			Technology				semiconductor physics.
	VR17	12	B.Tech-			COI	Apply the usage of phonemes while referring
			Information B.Tech-	-	ENGLISH-		to the dictionary
_	VR17	12	Information		COMMUNICATI	CO2	Articulate with others by using proper functions.
7	VD:5	10	B.Tech-	1000171121	ONSKILLS LAB -		
	VR17	12	Information	_	I	CO3	Enact the roles with proper body language.
	VR17	12	B.Tech-			CO4	Communicate fluently with proper
<u></u>	1.337	"	Information				pronunciation
	VR17	12	B.Tech-			COI	Experimentation of laws of vibrations in
			Information B.Tech-	-		<u> </u>	Strenteched string
	VR17	12	Information			CO2	Determination of velocity of sound, rigidity modulus of a wire, acceleration due to gravity,
	"	"	Technology		ENGINEERING	502	radius of gyration and Planck's constant.
•				_	,		1 v. Ejimion and t mick 3 Constant.

I					_		
8	VD 12		B.Tech-	1000171122	PHYSICSLABOR		Analyze the voltage vs. current characteristics
ll	VR17	12	Information		ATORY	CO3	of Zener diode and temperature vs. resistance
1			Technology				characteristics of a thermistor
			B.Tech-				Demonstration of formation Newton's rings,
	VR17	12	Information			CO4	diffraction pattern using grating and induced
$\vdash$			Technology				magnetic field in a cirucuclar coil.
			B.Tech-				Understand C programming development
	VR17	12	Information		1	COI	environment, compiling, debugging, and
	*****	1 -	Technology			COI	linking and
[			reclinology				executing a program using the development
l í			B.Tech-		COMPUNITO		Analyzing the complexity of problems,
	VR17	12	Information		COMPUTER	CO2	Modularize the problems into small modules
9			Technology	1000171128	PROGRAMMIN		and then convert
			B.Tech-		G		Understand and apply the in-built functions
ll	VR17	12	Information		LABORATORY	CO3	and customized functions for solving the
1 1		-					Understand and apply the pointers, memory
			B.Tech-				allocation techniques and use of files for
	VR17	12	Information			CO4	dealing with
			Technology				
		<del>.</del>	B.Tech-				variety of problems.
	VR17	12				COL	Develop communication skills by inferring the
			Information				technological advancements.
1 1	VRI7	12	B.Tech-			CO2	Identify the life of eminent personalities.
10			Information	1000171201	ENGLISH-II		
	VR17	12	B.Tech-			CO3	Relate the importance of Environment and its
			Information			COS	sustainability to language learning
	VR17	12	B.Tech-		. [	CO4	Create the art of writing by applying apt
	VICI7		Information			CU4	vocabulary and grammar.
		-	B.Tech-				Solve simultaneous linear equations
	VR17	12	Information			COI	numerically using rank of a matrix and also
}	- 1		Technology				Eigen values and Eigen vectors of a square
]			B.Tech-	1	ENGINEERING		
1 11	VRI7	12	Information	1000171203	MATHEMATICS.	CO2	Identify and solve partial differential equations.
'			B.Tech-	1000111203	III		Calculate gradient of a scalar function,
	VR17	12	Information		***	CO3	divergence and curl of a vector function.
			B.Tech-	1	l		Evaluate line, surface and volume integrals
	VR17	12	Information			CO4	
		<del></del>	B.Tech-				using appropriate integral theorems.
1	VRI7	12	1			COL	Identify different polymers and their
1			Information				Engineering applications.
	VR17	12	B.Tech-			CO2	Desribe various renwable and non- renwable
12			Information	1000171211	APPLIEDCHEMI		energy resources.
	VR17	12	B.Tech-		STRY	CO3	Aquire the knoweldge of mechanism and
			Information				principles measures of corrosion.
	VR17	12	B.Tech-			CO4	Illustrate green Synthesis, semi conductors,
			Information				super conductors and their applications in
			B.Tech-				Elucidate the natural resource & their
	VR17	12	Information			go.	importance for the sustenance of life and
	VK17	12	1			COL	recognises the need to conserve natural
			Technology		]		resource
			B.Tech-	1			Gives the broad view on the various attributes
	VRI7	12	Information			CO2	of pollution & and their impact & measure to
			Technology		ENVIRONMENT		reduce he pollution along with waste
13				1000171212	ALSTUDIES	<del>                                     </del>	Debates on social issues both rural and urban
			B.Tech-		····	1	environment possible means to combat the
	VR17	12	Information			CO3	
			Technology				challenges and trace the legislation of India
	<del></del>			-{		<del></del>	towards sustainability
	,,,, ,_		B.Tech-				Educates about Environmental Impact
	VR17	12	Information			CO4	Assessment, Environmental Impact Statement
<u></u>			Technology	ļ			& Environmental Audit
			B.Tech-				Write, compile and debug programs in C++
	VR17	12	Information			COL	language. Use different data types in a
			Technology	]	ODIECT		computer
	VR17	12	B.Tech-		OBJECT	000	Design programs involving decision structures,
1	VK1/	12	Information	1000151515	ORIENTED	CO2	loops and functions
8.4			B.Tech-	1000171215	PROGRAMMIN		Explain the difference between call by value
14	VR17	12	Information	1	G THROUGH	CO3	and call by reference.
14	VKI/			4	C++	<del></del>	
14	VKI		R Tach	1			
14		13	B.Tech-			CO4	Usage of generic programming, over loading of
14	VR17	12	Information			CO4	functions and operators, overriding and
14		12	Information Technology			CO4	functions and operators, overriding and exception
14		12	Information			CO4	functions and operators, overriding and

ı ſ		-	B.Tech-	ı	Г		Evaluate the frictional forces between contact
	VR17	12	Information			CO2	surfaces.
15			B.Tech-	1000171216	ENGINEERING -		Able to differentiate between centroid and
	VR17	12	Information		MECHANICS	CO3	centre of gravity and determine Centroid,
			Technology				centre of gravity and second moment of area
	VR17	12	B.Tech-			CO4	Analyse the motion and calculate trajectory
			Information				characteristics.
	VR17	12	B.Tech-			COI	Apply the usage of phonemes while referring to
			Information B.Tech-		-		the dictionary
	VR17	12	Information		ENGLISH-COM	CO2	Articulate with others by using proper functions.
16			B.Tech-	1000171221	MUNICATIONS		
1	VR17	12	Information	#1	KILLS LAB -2	CO3	Enact the roles with proper body language.
	VR17	12	B.Tech-			004	Communicate fluently with proper
	VKI/	12	Information		<u></u>	CO4	pronunciation
	VR17	12	B.Tech-			COI	Learn and apply basic techniques used in
	*****		Information			COI	Chemistry laboratory for small/medium scale
	VR17	12	B.Tech-		ENGINEERING	CO2	Estimate the metal ions present in a
17			Information B.Tech-	1000171227	CHEMISTRY		domestic/industry sample solutions.
	VR17	12	Information		LABORATORY	CO3	Utilize the fundamental laboratory techniques
			B.Tech-				for titrations and synthetic procedures.  Analyze data and gain experimental skills
	VRI7	12	Information			CO4	through instrumentation
			B.Tech-				Explain what constitutes an object-oriented
1	VR17	12	Information	Ì		CO1	approach to programming
	VR17	12	B.Tech-	1	ОВЈЕСТ-	602	Identify potential benefits of object-oriented
18	VKI/	12	Information	1000171229	ORIENTED	CO2	programming over other approaches.
"	VR17	12	B.Tech-	10001/1229	PROGRAMMIN	CO3	Apply an object-oriented approach to
	71017	12	Information		G LAB	CO3	developing applications of varying
	VR17	12	B.Tech-	1		CO4	solve the critical order problems using STL and
			Information B.Tech-				Generic Programming
	VR17	12	Information			COL	Outline R Studio and Programming with R
			B.Tech-	1	1		Explain the controls statements, Loops,
1	VR17	12	Information	1		CO2	Operators and functions of Programming
1,0	UDIA	10	B.Tech-	1,,,,,,,,,,,	Statistics and R		Apply math functions and simulation to
19	VRI7	12	Information	1005172101	Programming	CO3	calculate probability and statistical distributions
			B.Tech-	1			Perform Statstical tests using R to create and
1	VR17	12	Information	1		CO4	visualize graphics and explore datasets to
	',	'-	Technology			004	create testable hypothesis and identify
-	-						appropriate stastical tests.
	VR17	12	B.Tech-	1		COI	Solve mathematical proofs and can apply
		-	Information B.Tech-	-	MATHEMATICA		various optimization techniques.  Illustrate properties and characteristics of
	VR17	12	Information		L	CO2	various graphs
20			B.Tech-	1005172102	FOUNDATIONS		Apply basic counting techniques to solve
	VR17	12	Information		OFCOMPUTER	CO3	combinatorial probabilities and binomial
			B.Tech-	1	SCIENCE 1005172102		Solve the recurrence relations using various
	VR17	12	Information		1003172102	CO4	techniques like homogenous,nonhomogenous
_			Technology				and generating functions
	VR17	12	B.Tech-		1	COI	Perform number system conversions and
		1	Information	-		<u> </u>	intrepret usage of codes in various applications.
	VR17	12	B.Tech-			COT	Simplify the Boolean functions into minimum
	VKI/	12	Information Technology		DIGITAL LOGIC	CO2	number of literals using k-maps, boolean laws and tabular methods.
21	-	-	B.Tech-	1005172103	DESIGN		
	VR17	12	Information		Pionon	CO3	Design different combinational logic circuits.
1			B.Tech-	1		<b>—</b>	Design synchronous counters and develop
	VR17	12	Information			CO4	
			Technology	1			and registers.
	VR17	12	B.Tech-			COI	Applying appropriate process models for the
	V /C 1 /	12	Information	_		COI	application development of SDLC
	VR17	12	B.Tech-			CO2	Articulate the phases of SDLC from
	/1017	1.5	Information	4	SOFTWARE		requirement gathering phase to design phase
22	VR17	12	B.Tech-	1012172104	ENGINEERING	CO3	Analyzing the strategies for coding and testing
	-		Information	-			Iphase in Software product development
	VD 17	12	B.Tech-			004	Apply the knowledge about estimation and
	VR17	12	Information	1		CO4	
			Technology			1	the software project by using CASE tools

			p.m.,t	99			
ļ	VR17	12	B.Tech- Information			COI	Relate data structure concepts with real time applications.
	VR17	12	B.Tech-		DATA	CO2	Apply linear and non linear data structures by
23	VK17	12	Information	1005172105	STRUCTURES	CO2	identifying the appropriate need.
	VR17	12	B.Tech-	1	THROUGH C	CO3	Analyze searching and sorting techniques for
			Information B.Tech-				effective management of data  Design and implement operations of linear and
	VR17	12	Information			CO4	nonlinear data structures
	VR17	12	B.Tech-			COI	Enumerate different environments to install
	VKI	12	Information			COI	Python IDE and run basic Python scripts.
			B.Tech-				Learn and use the operators, functions, key
	VR17	12	Information Technology		PYTHON	CO2	Concepts of Object Oriented Programming in python.
24			B.Tech-	1012172106	PROGRAMMIN		Access Python from various online resources
	VR17	12	Information		G	CO3	and import packages to the current working
			Technology				environment.
	VR17	12	B.Tech-			CO4	Develop front end GUI using Visualization
	1	<u> </u>	Information B.Tech-				Libraries and Multithreading techniques.
	VR17	12	Information			COI	Design and analyze the time and space efficiency of the data structure be capable to
			Тесплооду			<b>U</b> U1	identity the appropriate data structure for given
	VR17	12	B.Tech-	1	DATA	CO2	Have practical knowledge on the application of
25	VK17	12	Information	1012172121	STRUCTURES	CO2	data structures using Linked Lists
	VRI7	12	B.Tech-		THROUGH LAB	CO3	Implementing programs stacks and queues
			Information B.Tech-	-	1		using arrays and linked lists  Develop programs by nonlinear data structures
	VR17	12	Information			CO4	such as tree and graphs
							Describe the Numbers, Math functions,
	VR17	12	B.Tech- Information			CO1	Strings, List, Tuples and Dictionaries in Python
	''''	12	Technology			COI	and Develop Python programs step-wise by
			B.Tech-	-	PYTHON		defining functions and calling them
26	VR17	12	Information	1012172122	PROGRAMMIN	CO2	Using different Decision Making statements and Functions in real world applications
ļ			B.Tech-	1	G LAB		Associating File handling operations to various
	VRI7	12	Information	j		CO3	domains and applications
	VR17	12	B.Tech-			CO4	Explain how to design GUI Applications in
	1		Information B.Tech-				Python and evaluate different database
	VR17	12	Information			CO1	Usage of general software architecture of programs to create 2D&3D computer graphics.
1			B.Tech-	1			Create 2D graphics through hardware system
	VR17	12	Information			CO2	architecture for computer graphics
27			B.Tech-	1012172201	COMPUTER		Implementing procedures through recall of
	VR17	12	Information	1012172201	GRAPHICS	CO3	graphics pipeline, frame buffers, and graphic
			Technology B.Tech-	-		<u> </u>	accelerators / co processors.
	VRI7	12	Information			CO4	Estimate models for lighting/shading Color, ambient light, distant and light with sources,
1	''''		Technology				Phong reflection model and shading
$\Box$			B.Tech-				Reproducing the concepts and features of
1	VRI7	12	Information			COI	object oriented programming in Java for real
-			Technology	4			world applications
28	VR17	12	B.Tech- Information	1012172202	JAVA PROGRAMMIN	CO2	Describe and implement the programs using command line arguments and Scanner Class.
""			B.Tech-	- 10121/2202	G		Analyze and implement the concepts of
1	VR17	12	Information			CO3	Inheritances and Multithreading with real
-	VR17	12	B.Tech-			CO4	Develop GUI programs using Applets and
<u> </u>	7.2217	1-	Information		_		Event Handling.
	VR17	12	B.Tech-			COI	Identify, interpret and analyze needs of
	-		Information B.Tech-	+		-	stakeholder Identify and apply relevant problem solving
	VR17	12	Information			CO2	methodologies in e-commerce applications
1			B.Tech-	1012172203	E-COMMERCE		Design components, systems and/or processes
29	VR17	12	Information			CO3	to meet required specifications for different
29	1 11111		Technology	_			applications
29	VX.17						
29	VR17	12	B.Tech-			CO4	Hypothesizing research methods for various
29		12	B.Tech- Information			CO4	domains.
29		12	B.Tech-			CO4	

1				-			
70	VR17	12	B.Tech- Information Technology		COMPUTER ORGANIZATIO	CO2	Analyze performance issues in processor and calculate the effective address of an operand by
30	VR17	12	B.Tech- Information Technology	1012172204	N & ARCHITECTUR E	CO3	addressing modes.  Ability to design memory organization that uses banks for different word size operations to understand the concept of cache memory
	VR17	12	B.Tech-	1		CO4	Assess the concept of Input / Output
	VR17	12	Information B.Tech-			COI	organization in making efficient programs to Build solutions to the complex problems using
İ	VR17	12	Information B.Tech-	1	OBJECT ORIENTED	CO2	object oriented approach  Fabricate the classes and responsibilities for the
31	VR17	12	Information B.Tech-	1012172205	ANALYSIS AND DESIGN USING	CO3	problem domain  Apply different UML tools for various case
	VR17	12	Information B.Tech-	-	UML	CO4	studies  Represent classes, objects, responsibilities and
_	VR17	12	Information B.Tech-			CO1	states using UML notations.  Construct LL, SLR, CLR and LALR parse
	VR17	12	Information B.Tech-			CO2	Understand types of parsers and develop
32	VR17	12	Information B.Tech-	1012172206	LANGUAGE PROCESSORS	CO3	models to increase efficiency Classify machines by their power to recognize
	V0.15		Information B.Tech-		INOCESSORS	COS	languages Synthesize inherited attributes, syntax directed
	VR17	12	Information Technology			CO4	translation and analyze techniques for code optimization
	VR17	12	B.Tech- Information			COI	Sketch modeling with UML by Deploying Structural Modeling, Behavioural Modeling,
33	VR17	12	Technology B.Tech- Information	1012172221	UNIFIED MODELING		Architectural Modeling using various tools Usage of various object relationships: inheritance, association, whole-part, and
	VRI7	12	Technology B.Tech-	1012172221	LANGUAGE LAB		dependency relationships Apply knowledge of UML model in developing
	VR17	12	Information B.Tech-			CO3	object oriented software.  Choose the appropriate model and design
-			Information B.Tech-			CO4	method for a specified applications  Correlate the basics of Java programming,
	VR17	12	Information Technology			COI	Inheritance, Multithreading and Exception Handling in various domains,
34	VR17	12	B.Tech- Information	1012172222	JAVA PROGRAMMIN	CO2	Pretaining skills to apply OOP and Java programming in problem solving
	VR17	12	B.Tech- Information		G LAB	CO3	build applications using GUI based concepts like Applets and AWT
_	VR17	12	B.Tech- Information			CO4	Ability to extend his/her knowledge in Java programming with his/her own business logic
	VRI7	12	B.Tech- Information			COI	Comprehend human behaviour and computational abilities to overcome limitations
35	VR17	12	B.Tech- Information	1012173101	HUMAN COMPUTER	CO2	formulating fundamental aspects of designing and evaluating interfaces.
	VR17	12	B.Tech- Information	1012173101	INTERACTION	CO3	Apply new theories, tools and techniques in Human Computer interaction
_	VR17	12	B.Tech- Information			CO4	Analyze and design software systems, components to meet desired needs.
	VR17	12	B.Tech- Information			COI	Develop advanced HTML pages with the help of tags and scripting language.
36	VR17	12	B.Tech- Information	1012173102	ADVANCED JAVA	CO2	Summarize the scope, life cycles, request and response headers in java applications.
	VR17	12	B.Tech- Information	10121/3102	PROGRAMMIN G	CO3	Construct a Web Application using Servlets
	VR17	12	B.Tech- Information			CO4	Design Web interface using Java Server Pages
	VR17	12	B.Tech- Information			COI	Illustrate ER model and normalization for database design.
37	VR17	12	B.Tech- Information	1012173103	DATA BASE MANAGEMENT	CO2	Create, maintain and manipulate a relational database using SQL
	VR17	12	B.Tech- Information	1012173103	SYSTEMS	CO3	Design and build database system for a given real world problem.
	VR17	12	B.Tech- Information			CO4	Examine issues in data storage and query processing and can formulate appropriate

			B.Tech-	l.			Extract architecture and features of UNIX
-	VR17	12	Information	1			Operating System and differentiate it from
			Technology	l l	-		other Operating Systems Use of UNIX commands for various file
- 1	VR17	12	B.Tech-	1	UNIX	CO2	
38			Information	1012173104	PROGRAMMIN -		handling and process control strategies.
	VR17	12	B.Tech-		G		Build Regular expressions for pattern matching
			Information		H		and apply them to various filters for a specific  Analyze a given problem and apply requisite
			B.Tech-		1	CO.4	
İ	VR17	12	Information				facets of SHELL programming in order to devise a SHELL script to solve the problem
			Technology				Categorize and assess various types of
		10	B.Tech-	1	1	COI	operating systems and execution of system
	VR17	12	Information			COI	calls at each phase.
			Technology B.Tech-	- 1	<u> </u>		Analyze various process scheduling and
39	VR17	12	Information	1005172206	OPERATING	CO2	memory management techniques to develop
29	-		B.Tech-	1005172200	SYSTEMS		Formulation of dead lock management,
	VRI7	12	Information			CO3	resource management techniques and IPC
	-		B.Tech-				Ability to perform tasks in Windows/ UNIX /
	VR17	12	Information	i		CO4	Linux /Android and other environments.
			B.Tech-				Expermenting various validation procedures of
	VR17	12	Information			CO1	Web Pages using HTML
	$\vdash$		B.Tech-		ADVANCED		Apply the advanced concepts of Java Servlets,
	VR17	12	Information		JAVA	CO2	JSP to web interfaces
40	$\vdash$		B.Tech-	1012173121	PROGRAMING		Illustrate the usage of Java Beans in Real time
	VR17	12	Information		LAB	CO3	Applications
			B.Tech-	1	LAD		Establishing the communication link between
	VR17	12	Information		1	CO4	Client and Server through JDBC
	-		B.Tech-				Experiment Unix utilities and perform basic
	VR17	12	Information		1	COI	shell control of the utilities
	$\vdash$		B.Tech-		l		Create effective file access control methods for
	VRI7	12	Information		UNIX AND	CO2	handling Unix file system.
41	$\vdash$		B.Tech-	1012173122	OPERATING		Developing shell scripts to automate various
	VR17	12	Information	1012173122	SYSTEMS LAB	CO3	tasks
	$\vdash$		B.Tech-				Implementing various methods involved in
1	VR17	12	Information			CO4	development of operating system
<del>                                     </del>	+		B.Tech-				Examine syntax and working of various
	VR17	12	Information	1		COL	commands in various database models.
			B.Tech-	1		-	Design and implement a database schema for a
1	VRI7	12	Information		DATA BASE	CO2	given problem-domain
42			B.Tech-	1012173123	MANAGEMENT		Populate and query a database using SQL
72	VR17	12	Information	10.2.73	SYSTEM LAB	CO3	DML/DDL commands
		<del></del> -	B.Tech-	1			Apply PL/SQL programming including stored
Į.	VR17	12	Information			CO4	
	1 1 1	1.2	Technology				in validation of database schema.
	-		B.Tech-	<del>                                     </del>			
1	VR17	12	Information	1		COI	Relate Ethical Human Values
		<u> </u>	B.Tech-	┨	PROFESSIONAL		Apply Engineering knowledge for societal
1	VR17	12	Information		ETHICS &	CO2	benefits
43	-		B.Tech-	1099172103	HUMAN		Elaborate responsibility for Safety Risk &
	VR17	12	Information		VALUES	CO3	rights
1	-		B.Tech-	-	11120130		
	VR17	12	Information			CO4	Outline the various Current Global Issues
	<del>- </del>		B.Tech-	<del>                                     </del>			Analyze the principles of layered approach
	VR17	12	Information			COI	select most appropriate architecture for any
			B.Tech-	-		$\vdash$	Identify the functionality of physical layer and
	VR17	12	Information		1	CO2	
	VK17	12	Technology		COMPUTER	"	protocols, based on the layer concept.
44	.		B.Tech-	1005173201	NETWORKS		Specify and identify deficiencies in existing
1	VD17	12	Information			CO3	
	VR17	12		1		003	better protocol.
	-	<del> </del>	Technology B.Tech-	$\dashv$		<u> </u>	Design the topological and routing strategies
	VR17	12	1			CO4	for an IP based networking infrastructure
		-	Information B Tagh		1	+	Analyze a web page and identify its elements
	1/2:5		B.Tech-			COI	1
	VR17	12	Information	1		1 001	·
	<u> </u>		Technology	-		-	XHTML and Cascading Styles sheets.
1	VR17	12	B.Tech-	1	WEB	CO2	Compile the basic concepts of Java Scripts to
45			Information	1005173202	TECHNOLOGIE		design dynamic web pages
1 "	l		B.Tech-		S	1	Analyze a given problem and apply requisite
	1 110 17	12	Information		1	CO3	appropriate tools for designing dynamic and
	VR17	1-	Technology			1	interactive web applications using PHP and

					0.		-			
								CO4		evelop web application through PERL
-			E	3.Tech-			70	COI	Re	produce models to effectively test the
-			Inf	ormation 3.Tech-				CO2	Ar	pply techniques of transaction flow testing od dataflow testing in various programs
V	R17	12	Inf	formation	1012173201			CO	Те	est the software using domain testing and
V	'R17	12	In	formation			ES		ILC A	ogic Based Testing pply various software testing tools for real
V	/R17	12				_		CO	4 1	forld applications  fodel data warehouse in addition to traditional
卞	/R17	12		- 1				со	1 or	nerational database systems
t	VR 17	12	1	B.Tech-		н		co	¹²	Apply mathematical strategies in data preprocessing techniques
$\vdash$		- 12	1	B.Tech-	1012173202		DATA	CC	ادا در	Execute the datamining models to analyze the officiency in the applied domians.
	VRI7			nformation B.Tech-			MIMING	CC	15	Solve real data mining problems through various tools and visualizing interesting
	VR17	12	1			+-		+	I V	Examine and Articulate semantic web basics,
	VR17	12	I	nformation_				-	a	Apply semantic relationships among these data
	VP17	12					SOCIAL	C	D2 6	elements using Resource Description Framework
	VK17				]   101217320	1 -	IETWORKS D SEMANTI	c	- 1	Design and implement a web services
8	VD 17	12					WEB	C	ا دن	application that "discovers" the Data and/or other web
	VKI				]			_		services via the semantic web.  Discover the capabilities and limitations of
49	VR17	12							.U4	semantic web technology for social networks. Identify the various Biometric technologies
	VR17	12	$\top$	B.Tech-		PIOMETRIC		01	applied in different domains	
		-	+	B.Tech-	-			CO2	Interpret the need of biometric in the computing environment and society	
		-	-	Information B.Tech-	10121732	04	SYSTEMS		CO3	Design and develop of biometric recognition system for the organization.
	VR17	12	_	Information	-			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		Develop simple applications for privacy.
	VR17	12	$\rightarrow$	Information				$\dashv$		Prepare the technical potential of the learning
	VR17	12		Information	_			$\vdash$		and self organizing systems.  Validating assumptions and derivations behind
	VR17	12			1012173	205	NEURAL		CO2	ANN algorithms in real world applications  Learn and evaluate analysis of linear auto
50	VR 17	12		B.Tech-	1012175	203	NETWORK	S	CO3	associative FF Networks
	-			B.Tech-				Γ	CO4	
	VRI			Information B.Tech-		-		$\neg$	COI	Implementing the methodology of Operations
	VRI	7 12			<u> </u>			-		Understand and apply Linear programming
	VRI	7 13		Informatio		2206			CO2	various applications
51		-		Technolog B.Tech-	101217.	200	RESEARC	H	CO3	Apply Multi-criteria decision techniques for
	VRI	7 1	2		<u>n</u>			ŀ	CO4	Create decision making under uncertainty and
	VR	7 1	2	Informatio						Identify Methods in AI that may be suited to
	VR	17 1	2	Information	on					Demonstrate AI search algorithms and
	VR	17	2	1	on		ARTIFICI	AL	co	formalizations on real world problems  Analyze the basic issues of different types of
5		,,	2	B.Tech-	100517	73204			СО	3 knowledge representation techniques to build
1	VR	1/		Technolo	gy				-	intelligent system  Apply probabilistic and fuzzy models to solve
1	VR	17	12	Informati	on				-	problems with uncertainty.  Design simulate and realize different digital
-	VE	.17	12						CC	UI Gliere
1		_							1	Estimate the spectra of signals that are to be processed by discrete time system and to ver
	VI	217	12	Informat	1				1 co	O2 the performance of various spectrum estimate
	V V V V V V V V V V V V V V V V V V V	VR17 VR17 VR17 VR17 VR17 VR17 VR17 VR17	VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         12           VR17         1           VR17         1           VR17	VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       Inf         VR17       12       I	VR17	VR17	VR17	VR17	VR17	VR17

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	VR17	12	B.Tech- Information			CO3	Design multi rate digital signal processing system.
		+	B.Tech-	1	-		Evaluating the architecture of DSP processor
	VR17	12	Information			CO4	for various applications
			B.Tech-				Categorize embedded systems and summarize
.	VR17	12	Information			CO1	8051 microcontroller architecture
	1/0.17	12	B.Tech-		EMBEDDED		Identify the unique characteristics of real time
54	VR17	12	Information	1005173205	EMBEDDED SYSTEMS	CO2	systems
34	VR17	12	B.Tech-	1005175205	SISIEMS	CO3	Apply syncronization tools in various real time
	VKI7	12	Information				scenarious
	VR17	12	B.Tech-			CO4	Define the unique design problems and
igert			Information				challenges of real time systems
	VR17	12	B.Tech-			CO1	Identify and select various robot configuration
			Information B.Tech-		-		and components. Select appropriate actuators and sensors for a
	VR17	12	Information	]		CO2	robot based on specific application.
55			B.Tech-	1003173203	ROBOTICS		Carry out kinematic and dynamic analysis for
	VR17	12	Information			CO3	simple serial kinematic chains.
			B.Tech-		ŀ		Perform trajectory planning for a manipulator
'	VR17	12	Information			CO4	by avoiding obstacles
$\vdash$			B.Tech-			201	Apply methods and procedures for data
	VR17	12	Information			COI	cleaning, pre-processing and integration
			B.Tech-		ſ		Identify and choose the principle algorithms
	VR17	12	Information		DATA MINING	CO2	and techniques used in clustering, association,
56			Technology	1012173221	LAB USING		classification and prediction.
	VR17	12	B.Tech-		WEKA	CO3	Carry out Visualization of datasets using
	7		Information				various algorithms
1	VR17	12	B.Tech-			CO4	Perform Analysis on different datasets setting
			Information B.Tech-				different parameters.  Create and design a static web pages using
	VR17	12	Information			COL	HTML and CSS
1			B.Tech-				Design dynamic web applications using
	VR17	12	Information	1005173223	WEB TECHNOLOGIE	CO2	JavaScript and explain how XML provides a
57	''''		Technology				standard method to access information
			B.Tech-		S LAB		Demonstrate database connectivity for
	VR17	12	Information			CO3	developing web applications using PHP
	VD 17	12	B.Tech-			CO4	Create a dynamic, webb based applications
	VR17	12	Information			CO4	using PERL
	VR17	12	B.Tech-			COI	Figure out practical solutions to the problems
	' ' '		Information	]			for various applications
1	VR17	12	B.Tech-		COTTON DE	CO2	Define, formulate and analyze test cases for
58	$\vdash$		Information	1012173222	SOFTWARE	-	given problem domain.
1	VR17	12	B.Tech-		TESTING LAB	CO3	Manage testplans and testmodels for project
	$\vdash$		Information B.Tech-	-			from beginning to end. Finding out implementation of different
	VR17	12	Information			CO4	strategies to replace errors.
			B.Tech-	<u> </u>			
	VR17	12	Information			COI	Interpret the various aspects of IPR
			B.Tech-	1			Conclude importance of Copyrights,
50	VR17	12	Information	1000177101	IPR AND	CO2	Trademarks & Trade Secrets
59	VD17	12	B.Tech-	1099173101	PATENTS	COT	Ohtain Datant Dights for New Innovations
	VRI7	12	Information	•		CO3	Obtain Patent Rights for New Innovations
	VR17	12	B.Tech-	1		CO4	Elaborate on Privacy Issues
	VKI7	12	Information	<u> </u>		- 004	Elaborate off Fittacy issues
	VR17	12	B.Tech-			COL	Identify basic security attacks and services
	71017	12	Information	_			
	VR17	12	B.Tech-		CRYPTOGRAPH	CO2	Analyze the strengths and weaknesses of
60			Information	1005174101	Y AND	<u> </u>	various symmeteric encryption algorithms.
	VR17	12	B.Tech-	1	NETWORK	CO3	Apply the concepts of number theory and
			Information	_	SECURITY		[public key algorithms in cryptography
	VR17	12	B.Tech-			CO4	Clasify various cryptographic protocols, hash functions, digital signature schemes
$\vdash$	1		Information B.Tech-	1		-	Analyze decion and develop new mobile
	VR17	12	Information			COI	application.
	<b>—</b>		B.Tech-	-		-	Apply various techniques that take new
	VR17	12	Information			CO2	
61	1	""	Technology	1012174101	MOBILE		come up with a solution(s).
"			B.Tech-	1	COMPUTING		Cento a naw od hoo natwork applications
	VR17	12	Information	1		CO3	and/or algorithms/protocols.
T.		-		_	1	$\overline{}$	

ſ	VR17	12	B.Tech-		1	CO4	Design and develop any existing or new
	VKI	-12	Information				protocol related to mobile environment
	VRI7	12	B.Tech-	1		COI	Analyze Hadoop Architecture
	-		Information B.Tech-				Acquire knowledge on Map Reduce
ļ	VR17	12	Information		BIG DATA	CO2	Framework and implement various
62	<del></del>		B.Tech-	1005174103	ANALYTICS		Develop applications using java language and
	VR17	12	Information			CO3	implement programs by making use of hadoop
			B.Tech-	1	Г	CO4	Implement Big data activities using PIG and
	VR17	12	Information				HIVE.
	VRI7	12	B.Tech-			COI	Describe the economic activities performed by
	VKI	12	Information		MANAGERIAL -		the businessmen in the business for profit  Evaluate the production theories and pricing
	VR17	12	B.Tech-		ECONOMICS	CO2	policies of various enterprises
63	-		Information B.Tech-	1099172106	AND -		Understand the significance of demand, its
	VR17	12	Information		FINANCIAL	CO3	analysis, measurement of demand and its
	<del> </del>		B.Tech-		ANALYSIS -		Evaluate investment proposals using capital
	VR17	12	Information			CO4	budgeting tools and techniques.
*		10	B.Tech-			COI	Develop applied methods in building
	VR17	12	Information		ADVANCED		architecture for communication in distributed
	VRI7	12	B.Tech-		OPERATING	CO2	Apply range of techniques available for
	VKI		Information_		SYSTEMS		increasing system security Outline the potential benefits of distributed
64	VR17	12	B.Tech-	1012174102	ADVANCED	CO3	
			Information		OPERATING SYSTEMS		systems Summarize the major security issues associated
		10	B.Tech-	•	SISIEMS	CO4	with distributed systems along with the range
	VR17	12	Information Technology			COT	of techniques available for increasing system
_			B.Tech-				Identify the analysis tools as they apply to
	VRI7	12	Information			CO1	information retrieval systems
			B.Tech-		i i		formulate the problems to be solved in current
	VR17	12	Information		INFORMATION	CO2	IR systems and describes the advantages of
65			Technology	1012174103	RETRIEVAL		current IR systems
1	VR17	12	B.Tech-		SYSTEMS	CO3	Analyzing various strategies and methods of
l	VICI	12	Information				representing and retrieving documents. using various tools building datamodels for
	VR17	12	B.Tech-	1		CO4	linking, describing and searching the web.
<b> </b>	1		Information B.Tech-	<del> </del>			Analyze and formulate the Architecture,
	VR17	12	Information			COI	protocols and applications of IoT.
	-		B.Tech-	1		500	Applyse and design the communication
1	VR17	12	Information	1	IoT & ITS	CO2	protocols and standards used in 101
66	,		B.Tech-	1004174105	APPLICATIONS		Analyse and design the simple IoT applications
	VR17	12	Information		ATTEICATIONS	CO3	
		<u> </u>	Technology				simulation or hardware
1	VR17	12	B.Tech-			CO4	Implement the real time IoT applications.
			Information		<del>                                      </del>	<del>                                     </del>	Incorporate various multimedia formats and
	VR17	12	B.Tech-	1		COI	compression techniques in web applications
1			Information B.Tech-	-		$\vdash$	Merging different types of image formats and
	VR17	12	Information		MULTIMEDIA	CO2	audio formats in various applications
6	. 1		B.Tech-	1012174104		CO3	Apply different video formats and compression
-	VR17	12	Information		G		techniwues in web interfaces.
	110.10	10	B.Tech-	7		CO4	Gain the knowledge in developing real world
	VR17	12	Information			1	multimedia applications
			B.Tech-				Figure out management strength (i.e., strong
1	VR17	12	Information			CO	points) of the organization, to take advantage of the opportunities available.
1		<u> </u>	Technology	_			Build reports on production statistics regarding
		1	B.Tech-		MANAGEMENT	co:	
1,	VR17	12	Information	101217410			effect on costs and quality of the products
0	8	<del> </del>	Technology B.Tech-	- 101217410.	SYSTEMS	·	Create strong protocols to strengthen
	VR17	12	Information		J. D. L. W. 1.00	co	
	VK1/	12	Technology	1			new opportunities available.
			B.Tech-	7		co	Implement Decision support system at various
	VR17	12	Information			LU.	levels in an organization
-	Uni		B.Tech-			СО	Infer basic concepts and issues of software
1	VR17	12	Information				[project management
	VR17	12	B.Tech-		SOFTWARE	СО	2 conduct activities necessary to successfully
1	59	12	Information	100517410	PROJECT		complete and close the Software projects
- 1 '	VR17	12	B.Tech-		MANAGEMENT	r co	Estimate the effort required for a software project development and identify software
- 1	UNI.		Information				

					_		
	VR17	12	B.Tech-			CO4	develop the skills for tracking and controlling
$\vdash$	*****		Information				software deliverables
	VD17		B.Tech-		I	go.	Recognize the characteristics of machine
	VR17	12	Information			COI	learning and differentiate machine learning
ļ }	-		Technology B.Tech-				algorithms into supervised unsupervised and
70	VRI7	12	Information	1005174102	MACHINE	CO2	Solve classification problems using concept
~			B.Tech-	1005174102	LEARNING		learning and decision trees Importance of Dimensonal Reduction and
	VR17	12	Information			CO3	vector machine algorithms
h			B.Tech-		l		Identify the concept behind neural networks for
	VR17	12	Information			CO4	learning non-linear functions
			B.Tech-				Understand the relationship between business
	VR17	12	Information			COI	information needs and decision making
ነ ነ	VRI7	12	B.Tech-		DECICION	G00	Apply the general nature and range of decision
71	VKI7	12	Information	1012174106	DECISION SUPPORT	CO2	support system algorithms
l '' [	VR17	12	B.Tech-	1012174100	SYSTEM	CO3	Appraise issues related to the development of
	VIXI7	12	Information		21215141		DSS
1	VRI7	12	B.Tech-			CO4	Create appropriate modelling techniques
$\vdash$	VIK17		Information				
	VR17	12	B.Tech-			COI	Evaluate different encryption algorithms on
			Information		CRYPTOGRAPH		number theory
1 1	VR17	12	B.Tech-		Y AND	CO2	Implement Symmetric cryptographic
72			Information B.Tech-	1005174121	NETWORK		algorithms
	VR17	12	Information		SECURITY LAB	CO3	Implement Asymmetric cryptographic algorithms
			B.Tech-				Execute Various Cryptographic Hash
	VR17	12	Information			CO4	algorithms
			B.Tech-				Implement programs by making use of Hadoop
	VRI7	12	Information			COI	i/o.
	VR17	12	B.Tech-	1	DICDATA	CO2	Apply data modeling techniques to large data
73	VK17	12	Information	1005174122	BIGDATA ANALYTICS	CO2	sets
1 '3	VR17	12	B.Tech-	1003174122	LAB	CO3	Create applications for Big Data analytics
	*****		Information		LAB	CO3	
	VR17	12	B.Tech-			CO4	Develop Map Reduce programs to solve real
			Information				world problems which deals with big data.
	VR17	12	B.Tech-			CO1	Illustrate the basic elements and concepts
		<u> </u>	Information B.Tech-	-			related to distributed system technologies
	VR17	12	Information		1	CO2	Tell the characteristics of distributed systems for designing architectural models
74			B.Tech-	1005174203	DISTRIBUTED		Enumerate the features and applications of
' '	VR17	12	Information		SYSTEMS	CO3	important standard protocols which are used in
			Technology			555	the distributed system
	1/0.13	15	B.Tech-	1	1		Interpret inter-process communication in a
1	VR17	12	Information			CO4	distributed system
	VR17	12	B.Tech-			601	apply the knowledge of cloud technology to
	VKI7	. 14	Information			COI	demonstrate the working principles of cloud
	VR17	12	B.Tech-	]	'	CO2	analyse cloud services extended by various
75	1111		Information	1005174106	CLOUD		cloud providers to build a cloud
'	VR17	12	B.Tech-		COMPUTING	CO3	Identify emerging cloud programming
			Information	-			paradigms and its software environments
	VR17	12	B.Tech-			CO4	Design and develop the backup strategies for
-			Information				cloud data based on features.
	VR17	12	B.Tech- Information	1		COL	Gives an outline of management and its nature
	VK17	12	Technology			COI	scope and functions and hierarchical levels and organizational structure and managing the
		<u> </u>	B.Tech-	-		$\vdash$	Bring out various concepts of strategic
l	VRI7	12	Information		MANAGEMENT	CO2	management and project management
76			B.Tech-	1099172203	SCIENCE	_	Elucidate the process of matching manager
	VR17	12	Information	1		CO3	qualifications with position requirements and
			Technology				concept of marketing mix
	VDIT	12	B.Tech-	1		CO4	Able to understand the various functions of
	VR17	12	Information	<u> </u>		CO4	production and inventory management
			B.Tech-				Build, revise and execute concurrent and
	VR17	12	Information			COL	parallel algorithms, architectures and
			Technology	1			illustrating the work to avoid race condition.
			B.Tech-		CONCURRENT		Interpret the working of multi processor, multi
	VR17	12	Information		AND PARALLEL	CO2	core architectures and illustrating the work to
77			Technology	1005174205	PROGRAMMIN	-	avoid race condition.
	VR17	12	B.Tech-		G	CO3	solve problems requiring both semaphores and
1			Information	_	I		events as part of the solution

VR17   12   Information Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Technology   Techn						_		
VR17   12   B. Tech- Information   Technology   B. Tech- Information   Technology   B. Tech- Information   Technology   B. Tech- Information   Technology   Technology   VR17   12   B. Tech- Information   Technology   VR17   12   B. Tech- Information   Technology   VR17   12   B. Tech- Information   Technology   VR17   12   B. Tech- Information   Technology   VR17   12   B. Tech- Information   Technology   VR17   12   B. Tech- Information   Technology   VR17   12   B. Tech- Information   Technology   VR17   12   B. Tech- Information   VR17   12   B. Tech- Information   Technology   VR17   12   B. Tech- Information   VR17   12   B. Tech- Information   Technology   VR17   12   B. Tech- Information   VR17   12   B. Tech- Information   VR17   12   B. Tech- Information   Technology   VR17   12   B. Tech- Information   VR17   12   B. Tech- Information   VR17   12   B. Tech- Information   Technology   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR1				B.Tech-				Implement different server architectures
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Technology								
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VR17   12   B. Tech-   Information	[	VD 17	12	B.Tech-			CO1	Project and describe various risk management
VR17   12   Information   VR17   12   Information   Information   VR17   12   Information   Information   Information   VR17   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information	1 1	VKI	1.2	Information			CO3	processes and practices in a network
VR17   12   Information   VR17   12   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Info		1/0.17	1.2	B.Tech-			- CO 4	Evaluation of decision making outcomes of
VR17   12   B.Tech- Information   VR17   12   B.Tech- Information   Technology   VR17   12   B.Tech- Information   VR17   12   B.Tech- Information   VR17   12   B.Tech- Information   VR17   12   B.Tech- Information   VR17   12   B.Tech- Information   VR17   12   B.Tech- Information   VR17   12   B.Tech- Information   VR17   12   B.Tech- Information   VR17   12   B.Tech- Information   VR17   12   B.Tech- Information   VR17   12   B.Tech- Information   VR17   12   B.Tech- Information   VR17   12   B.Tech- Information   VR17   12   B.Tech- Information   VR17   VR17   12   B.Tech- Information   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17	ļ	VKI/	12	Information		1	CO4	
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VR17   12   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   Information   In				B.Tech-				
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VR17   12   Information   Technology	79				1005174201			
Technology   B.Tech   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Information   Part   Inform	''	VR 17	12		1005177201		CO3	
VRI7   12   B.Tech- Information   SOFTWARE		, , , , , , , , , , , , , , , , , , ,	**			TECHNOLOGY	CO3	
VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   VR17   12   Information   Technology   VR17   12   Information   VR17   VR17   12   Information   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17   VR17	l 1		_					
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Technology  NR17 12 B.Tech- Information Technology  VR17 12 B.Tech- Information Technology  VR17 12 B.Tech- Information Technology  VR17 12 B.Tech- Information Technology  VR17 12 B.Tech- Information Technology  VR17 12 B.Tech- Information Technology  VR17 12 Information Technology  VR17 12 Information Technology  VR17 12 Information Technology  VR17 12 Information Technology  VR17 12 Information Technology  VR17 12 B.Tech- Information Technology  VR17 12 B.Tech- Information Technology  VR17 12 B.Tech- Information Technology  VR17 12 B.Tech- Information Technology  VR17 12 B.Tech- Information Technology  VR17 12 B.Tech- Information CO4 Improve reflective listening and inclusive, respectful conversation Analyze a complex computing problem and to apply software engineer principles in design				1	1			1 1 2 2
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VR17 12 Information Technology  VR17 12 B.Tech- Information B.Tech- VR17 12 Information  B.Tech- Information CO3 and collaborative discussion with the goal of making considered judgments.  Improve reflective listening and inclusive, respectful conversation  Analyze a complex computing problem and to apply software engineer principles in design	"				1	SEMINAR	<b> </b>	
VR17 12 B.Tech- Information B.Tech- VR17 12 Information B.Tech- VR17 12 Information CO1 apply software engineer principles in design		VD17	12	1			002	
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VR17   12   Information   CO4   respectful conversation		<u> </u>			-			
Information   respectful conversation     B.Tech-   Analyze a complex computing problem and to     VR17   12   Information   CO1   apply software engineer principles in design		VR17	12				CO4	
VR17 12 Information CO1 apply software engineer principles in design	<b>—</b>	1			ļ		1	respectful conversation
				1	1		1	
Technology and		VR17	12	1			COI	apply software engineer principles in design
			<u> </u>	Technology	_			and

	VR17	12	B.Tech- Information			CO2	Investigate and develop computing-based solution using mordern tools that help in sustaining environment and society.
84	VR17	12	B.Tech- Information Technology	1012174231	PROJECT	CO3	Use formal and informal discussions with team members and guide, make presentations and prepare technical document.
	VR17	12	B.Tech- Information Technology			CO4	Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.



PRINCIPAL
VIGNAN'S INSTITUTE OF
'nformation Technology (A)
*side: VSEZ, Duvvada, Visakhapatnam-49

			VIGNAI B.TECH. I	N'S INSTITUT	E OF INFORM	AATION AUNICA	TECHNOLOGY(A) TION ENGINEERING
				JEECT ROTTIC	COURSE OF		
S.No	Regula tion	Program me Code	Programme Name	Course Code		СО	Course Outcome: After the completion of the course student will be able to
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Enhance English Language by relating the ideas of eminent personalities.
1	VR17	04	B.Tech-Electronics and Communication Engineering	1000171101		CO2	Articulate the technological advancements fluently.
	VR17	04	B.Tech-Electronics and Communication Engineering	1000171101	ENGLISH-1	CO3	Inculcate the art of thinking and writing clearly and logically.
	VR17	04	B.Tech-Electronics and Communication Engineering		o	CO4	Enact various themes through team work and learn the usage of vocabulary through humourous texts.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Solve the first and higher order linear differential equations.
	VRI7	04	B.Tech-Electronics and Communication Engineering	1000171102	Engineering Mathematics-	CO2	Estimate extrema and series expansions of functions of several variables.
	VR17	04	B.Tech-Electronics and Communication Engineering		I	CO3	Interpret area and volume using double integral and triple integral.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Evaluate of solution of Ordinary differential equations by using Laplace Transform technique.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Estimate numerical solution of non Linear equation.
3	VR17	04	B.Tech-Electronics and Communication Engineering	1000171103	Engineering : Mathematics- II	CO2	Construct Interpolating polynomial for the given data.
	VRI7	04	B.Tech-Electronics and Communication Engineering			CO3	Calculate Numerical Solution of ODE and Numerical Integration.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Evaluate Fourier series and Fourier transforms for functions.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	interpret fundamentals of computers and convert flowcharts/algorithms to C Programs, compile and debug programs
4	VR17	04	B.Tech-Electronics and Communication Engineering	1000171105	Computer	CO2	Apply decision making and Iterative feature of C Programming language effectively.
7	VR17	04	B.Tech-Electronics and Communication Engineering		Programming using C	CO3	design and implement programs to analyze the different pointer applications
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Apply structures and unions and Implement file Operations in C programming for any given application
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Understand the use of drawing instruments to construct the polygons and curves
5	VR17	04	B.Tech-Electronics and Communication Engineering	1000171106	Engineering	CO2	Apply the principle of orthographic projections to draw Orthographic projections of points, lines.
J	VR17	04	B.Tech-Electronics and Communication Engineering		Drawing	CO3	Construct the various types of planes and solids its views in different Positions
	VR17	04	B.Tech-Electronics and Communication Engineering	1		CO4	Develop isometric views of simple objects

2 48 25	1.000						
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Identify different polymers and their Engineering applications.
6	VR17	04	B.Tech-Electronics and Communication Engineering	1000171111	Applied	CO2	Desribe various renwable and non- renwable energy resources.
	VR17	04	B.Tech-Electronics and Communication Engineering		Chemistry	CO3	Aquire the knoweldge of mechanism and principles measures of corrosion.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Illustrate green Synthesis, semi conductors, super conductors and their applications in industry.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Apply the usage of phonemes while referring to the dictionary
7	VR17	04	B.Tech-Electronics and Communication Engineering	1000171171	English- Communicati	CO2	Articulate with others by using proper functions.
,	VR17	04	B.Tech-Electronics and Communication Engineering	1000171121	on Skills Laboratory-I	CO3	Enact the roles with proper body language.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Communicate fluently with proper pronunciation
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Understand the basic components and peripherals of a computer.
8	VR17	04	B.Tech-Electronics and Communication Engineering	1000121101		CO2	Familiar in configuring a system.
o	VR17	04	B.Tech-Electronics and Communication Engineering	1000171124	IT Workshop	CO3	Learn the usage of productivity tools.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Acquire knowledge about the netiquette and cyber hygiene.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	analyze a given c program to identify bugs and write the appropriate code.
	VR17	04	B.Tech-Electronics and Communication Engineering		Computer	CO2	Apply decision making and Iterative feature of C Programming language to implement them effectively.
9	VR17	04	B.Tech-Electronics and Communication Engineering	1000171128	Programming Lab	CO3	Build programs using functions ,arrays and pointers.
	VR17	04	B.Tech-Electronics and Communication Engineering		:	CO4	Develop a c program for implementing user defined data types and implement file handling mechanisms.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Develop communication skills by inferring the technological advancements.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO2	Identify the life of eminent personalities.
10	VR17	04	B.Tech-Electronics and Communication Engineering	1000171201	ENGLISH-II	CO3	Relate the importance of Environment and its sustainability to language learning
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Create the art of writing by applying apt vocabulary and grammar.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Solve simultaneous linear equations numerically using rank of a matrix and also Eigen values and Eigen vectors of a square matrix.

11	VR17	04	B.Tech-Electronics and Communication Engineering	1000171203	Engineering Mathematics-	CO2	Identify and solve partial differential equations.
•	VR17	04	B.Tech-Electronics and Communication Engineering	1000171203 N	III	CO3	Calculate gradient of a scalar function, divergence and curl of a vector function.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Evaluate line, surface and volume integrals using appropriate integral theorems.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Describe the wave phenomena of light and working principle of optical instruments.
12	VRI7	04	B.Tech-Electronics and Communication Engineering	1000171207	Applied	CO2	Apply the knowledge of basic quantum mechanics to understand wave equation.
	VR17	04	B.Tech-Electronics and Communication Engineering	1000171207	Physics	CO3	Understanding the basic knowledge of free electon theory of materials.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Make use of the basic concepts of energy bands in crystalline solids to understand semiconductor physics.
	VR17	04	B.Tech-Electronics and Communication Engineering	5		CO1	Analyze the RLC circuit's behavior in detailed.
13	VR17	04	B.Tech-Electronics and Communication Engineering	1000171209	Network	CO2	Analyze the performance of periodic waveforms.
	VR17	04	B.Tech-Electronics and Communication Engineering	1000111209	Analysis	CO3	Gain the knowledge in characteristics of two port network parameters (Z, Y, ABCD, h &g).
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Analyze the filter design concepts in real world applications.
,	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	Elucidate the natural resource & their importance for the sustenance of life and recognises the need to conserve natural resource
14	VR17	04	B.Tech-Electronics and Communication Engineering	1000171212	ENVIRONM ENTAL	CO2	Gives the broad view on the various attributes of pollution & and their impact & measure to reduce he pollution along with waste management
	VR17	04	B.Tech-Electronics and Communication Engineering	1000171212	STUDIES	CO3	Debates on social issues both rural and urban environment possible means to combat the challenges and trace the legislation of India towards sustainability
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Educates about Environmental Impact Assessment, Environmental Impact Statement & Environmental Audit
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	Relate data structure concepts with real time applications.
15	VR17	04	B.Tech-Electronics and Communication Engineering	1000171213	Data	CO2	Apply linear and non linear data structures by identifying the appropriate need.
13	VR17	04	B.Tech-Electronics and Communication Engineering	1000171213	Structures	CO3	analyze searching and sorting techniques for effective management of data
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Design and implement operations of linear and nonlinear data structures
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	Apply the usage of phonemes while referring to the dictionary
16	VR17	04	B.Tech-Electronics and Communication Engineering	1000171771	English Communicati	CO2	Articulate with others by using proper functions.

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	VD12	0.1	B.Tech-Electronics		on Skills Lab-		
	VR17	04	and Communication		2	CO3	
		_	Engineering B.Tech-Electronics				Enact the roles with proper body language.
ı	VR17	04	and Communication			CO4	
	YK1/	V <del>-1</del>	Engineering			CO4	Communicate fluently with proper pronunciation
			B.Tech-Electronics			· · · · · · · · · · · · · · · · · · ·	Continuincate fruentry with proper pronunctation
	VR17	04	and Communication			CO1	
	, ,,,,,		Engineering			COI	Experimentation of laws of vibrations in strenteched string
			B.Tech-Electronics		}		Determination of velocity of sound, rigidity modulus of a
	VR17	04	and Communication			CO2	wire, acceleration due to gravity, radius of gyration and
	Į		Engineering	1000151000	Engineering		Planck's constant.
17			B.Tech-Electronics	1000171222	Physics		Analyze the voltage vs. current characteristics of Zener
	VRI7	04	and Communication		Laboratory	CO3	diode and temperature vs. resistance characteristics of a
			Engineering				thermistor
			B.Tech-Electronics	,	] [	<u> </u>	Demonstration of formation Newton's rings, diffraction
	VR17	04	and Communication			CO4	pattern using grating and induced magnetic field in a
			Engineering				cirucuclar coil
			B.Tech-Electronics		İ		Develop skills to design and analyze simple linear and non
	VR17	04	and Communication			CO1	linear data structures
			Engineering				
			B.Tech-Electronics				Identify and apply the suitable data structure for the given
-	VR17	04	and Communication		Data	CO2	real world problem
			Engineering	1000171228	Structures		
	VR17	0.4	B.Tech-Electronics and Communication		Programming	003	Implement programs on linear datastructures.
	VK17	04			Lab	CO3	
			Engineering B.Tech-Electronics				Darford Ladie and Market Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of
	VR17	04	and Communication			CO4	Perform basic operations on trees.
	' ' '	04	Engineering			CO4	
			B.Tech-Electronics				Explain the basic concepts of semiconductor physics and
	VR17	04	and Communication			COI	summarize the characteristics of PN junction diode in
			Engineering				different modes of operation.
			B.Tech-Electronics				Compare the construction, working principle of rectifiers,
	VR17	04	and Communication			CO2	with and without filters with relevant expressions and
			Engineering		F1		necessary comparisons.
19			B.Tech-Electronics	1004172101	Electronic Devices and		Evaluate the construction, principle of operation of
''	VR17	04	and Communication	1004172101	Circuits	CO3	transistors, BJT and FET with their V-I characteristics in
			Engineering			003	different configurations and understand the various biasing
							techniques for BJT and FET.
			B.Tech-Electronics				Eestimate the stabilization concepts with expressions and
-00	VR17	04	and Communication			CO4	perform the analysis of small signal low frequency transistor
			Engineering				amplifier circuits using BJT and FET in different
			D.Tr. J. El				configurations.
	VR17	04	B.Tech-Electronics and Communication			COL	
	VKI	04	Engineering			COI	Convert numeric information in different Number systems.
			B.Tech-Electronics				Calculate description of the state of
	VR17	04	and Communication			CO2	Solve the simple Boolean expressions using the theorems and postulates of Boolean algebra and to minimize
	````	"	Engineering		Switching	002	combinational functions.
20		-	B.Tech-Electronics	1004172102	Theory and		Design and analyze small combinational circuits and to use
	VR17	04	and Communication		Logic Design	CO3	standard combinational functions/building blocks to build
		"	Engineering				larger more complex circuits.
			B.Tech-Electronics				Design and Implement sequential circuits and devices and
	VR17	04	and Communication			CO4	to use standard sequential functions/building blocks to build
L			Engineering				larger more complex circuits.
			B.Tech-Electronics			-	Analyze the different signals spectral characteristics of
	VR17	04	and Communication			COI	continuous-time periodic and a periodic signals using
			Engineering				Fourier analysis.
			B.Tech-Electronics				
	VR17	04	and Communication			CO2	Explain the process of sampling and the effects of under
21			Engineering	1004172103	Signals and		sampling, over sampling.
-1			B.Tech-Electronics		Systems		
	VR17	04	and Communication			CO3	Evaluatae convolution both in time domain and frequency domain.
			Engineering	J			doman.
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	VR17	04	B.Tech-Electronics and Communication			CO4	Interpret the Laplace transform and Z- transform for analysis of continuous-time and discrete-time signals and
	VR17	04	Engineering B.Tech-Electronics and Communication Engineering			COI	Demonstrate the operation of DC generator, DC motor and analyze the characteristics of DC generator.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO2	Develop equivalent circuit and evaluate performance of transformers
22	VR17	04	B.Tech-Electronics and Communication Engineering	1004172104	Electrical Technology	CO3	Illustrate the Principle of operation of Induction motor and Synchronous machine and also explain the speed-torque characteristics and starting methods of induction motor
:	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Analyze various Electrical Measuring instruments like Ammeter, Voltmeter, Wattmeter
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Determine the Probability distribution and density functions for single and multiple random variables
23	VR17	04	B.Tech-Electronics and Communication Engineering	1004172105	Random Variables and	CO2	Evaluate Mean and variances of random signals.
0	VR17	04	B.Tech-Electronics and Communication Engineering	1001112100	Stochastic Process	CO3	Examine autocorrelation function of random process and develop the relationship between power density spectrum and auto correlation.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Estimate the noise in the communication channels
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	Find derivatives of complex functions and solutions for special functions
	VR17	04	B.Tech-Electronics and Communication Engineering		Mathematics-	CO2	Understand the analyticity, potential fields, residues and poles of complex potentials in field theory and electromagnetic theory.
24	VR17	04	B.Tech-Electronics and Communication Engineering	1004172106	IV	CO3	Solve for mean and variance for given samples, To apply basic probability techniques and models to analyze the performance of computer systems, and, in particular, of networks and queues
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Expose the basic characteristic features of a queuing system and acquire skills in analyzing queuing models.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Determine the V-I characteristics of zener diode, PN junction diode and its applications such as Half wave Rectifier and Full Wave Rectifier.
25	VR17	04	B.Tech-Electronics and Communication Engineering	1004172121	Electronic Devices and	CO2	Analyze the Input and Output characteristics of BJT in CE, CC configurations and design the CE amplifier and CC amplifier.
23	VR17	04	B.Tech-Electronics and Communication Engineering		Circuits Lab	1	Estimate the characteristics of FET & design the CS amplifier.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Examine the characteristics of SCR and UJT.
	VR17	04	B.Tech-Electronics and Communication Engineering	1		COI	Determine resonance frequency, Q-factor of RLC network and to analysis time response of first orders RC/RL network for non-sinusoidal inputs.
26	VR17	04	B.Tech-Electronics and Communication Engineering	1	Networks & Electrical Technology		Estimate parameters of two port networks and to understand the concept network theorems in network reduction of electrical networks.
	VR17	04	B.Tech-Electronics and Communication Engineering	1	Lab	CO3	Determine efficiency of dc shunt machine with actual loading and analyses performance of 3 phase induction motor

	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Illustrate the significance of regulation of an alternators through synchronous impedance method.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Explain classification of amplifiers and analyze the CE, CB, CC amplifiers using small signal hybrid model and derive the voltage gain, current gain, input impedance and output impedance
27	VR17	04	B.Tech-Electronics and Communication Engineering	1004172201	Electronic Circuit	CO2	Design and analyze the cascaded RC coupled BJT amplifier and MOS Amplifier and different types of the coupled amplifiers
	VR17	04	B.Tech-Electronics and Communication Engineering		Analysis	CO3	Analyze the different types of feedback amplifiers and oscillators
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Develop different types of power amplifiers and learn the effects of cascading on single, double tuned amplifiers.
	VR17	04	B.Tech-Electronics and Communication Engineering	;		COI	Understand the concepts of feedback and its advantages to various control systems
28	VR17	04	B.Tech-Electronics and Communication Engineering	1004172202	Control	CO2	Analyze the transfer function characteristics of the given different order system and introducing various approaches to reduce the overall system complexity
	VR17	04	B.Tech-Electronics and Communication Engineering		Systems	CO3	Applying different approaches for absolute stability and relative stability criteria.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Evaluating the system performance in non zero input conditions.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Contrast the electric field and magnetic fields, analyze the Maxwell's Equations for static and time varying field
29	VR17	04	B.Tech-Electronics and Communication Engineering	i	Electromagnet ic Waves and	CO2	Determine the EM wave equation and charaterize the propagation of EM wave through conductor and dielectric medium.
	VR17	04	B.Tech-Electronics and Communication Engineering		Transmission Lines	CO3	Modelling the transmission line using the basic circuit elements.
	VR17	04	B.Tech-Electronics and Communication Engineering	1004172203		CO4	Justification of smith chart to find the impedance mismatching and measurement of VSWR.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	Differentiate various Analog modulation and demodulation schemes and their spectral characteristics
30	VR17	04	B.Tech-Electronics and Communication Engineering		Analog Communicatio	CO2	Analyze noise characteristics of various analog modulation methods
;	VR17	04	B.Tech-Electronics and Communication Engineering		ns	CO3	Examine various functional blocks of radio transmitters and receivers
	VR17	04	B.Tech-Electronics and Communication Engineering	1004172204		CO4	Design simple analog systems for various modulation techniques.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	Design linear and non-linear wave shaping circuits
31	VR17	04	B.Tech-Electronics and Communication Engineering		Pulse and Digital	CO2	Analyse various wave shaping circuits and signal generating circuits
	VRI7	04	B.Tech-Electronics and Communication Engineering		Circuits	CO3	Examine the difference between multi vibrators and time base generators
	VR17	04	B.Tech-Electronics and Communication Engineering	1004172205		CO4	Evaluate different non sinusoidal signals generators and its use in experimental research areas

	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Discuss the concepts of managerial economics like Demand Law of Demand, Determinants of demand and demand forecasting techniques
32	VR17	04	B.Tech-Electronics and Communication Engineering		Engineering Economics and	CO2	Make use of production functions of different variables
	VR17	04	B.Tech-Electronics and Communication Engineering		Management Science	CO3	Evaluate various forms of business organizations
	VR17	04	B.Tech-Electronics and Communication Engineering	1099172207		CO4	Construct network diagram and solve problems of PERT and CPM
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	Interpret different types of negative feedback amplifiers.
33	VR17	04	B.Tech-Electronics and Communication Engineering		Electronic Circuit	CO2	Develop different types of oscillators.
33	VR17	04	B.Tech-Electronics and Communication Engineering		Analysis Lab	CO3	Design different types of multistage amplifiers.
	VR17	04	B.Tech-Electronics and Communication Engineering	1004172221		CO4	Estimate the different types of power and tuned amplifiers.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Generate, detect and analyze different analog modulation schemes.
34	VR17	04	B.Tech-Electronics and Communication Engineering		Analog	CO2	Evaluate the various measures that improve receiver performance.
34	VR17	04	B.Tech-Electronics and Communication Engineering		Communications Lab	CO3	Demonstate various pulse modulation schemes.
	VR17	04	B.Tech-Electronics and Communication Engineering	1004172222		CO4	Develop the programming aspects of MATLAB in simulating various analog modulation techniques.
	VR17	04	B.Tech-Electronics and Communication Engineering	1001112		CO1	Apply fundamental principles of engineering
3.5	VR17	04	B.Tech-Electronics and Communication Engineering			CO2	Communicate fluently and effeciently
5	VR17	04	B.Tech-Electronics and Communication Engineering		Industrial visit	CO3	Interact and follow engineering ethics and discipline in industry
	VR17	04	B.Tech-Electronics and Communication Engineering	1004172231		CO4	Develop professional work reports, presentations and learn Project management.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Demonstrate basic operation and characteristics of op-amp.
2-	VR17	04	B.Tech-Electronics and Communication Engineering		Linear IC	CO2	Interpret different linear and non-linear applications of Op-Amp.
36	VR17	04	B.Tech-Electronics and Communication Engineering		Applications	CO3	Design & analyze different types of active filters using Op-Amp.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Compare different types of ADC and DACs
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Compare different digital carrier modulation and demodulation schemes.

37	VR17	04	B.Tech-Electronics and Communication Engineering	1004153103	Digital Communicatio	CO2	Evaluate digital modulation techniques for optimal reception.
31	VR17	04	B.Tech-Electronics and Communication Engineering	1004173102	ns	CO3	Apply various errors correction and detection codes to digital data.
	VR17	04	B.Tech-Electronics and Communication Engineering	8		CO4	Evaluate the error probability calculations for digital modulation techniques .
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Analyze the Performance of a computer using performance equation
38	VR17	04	B.Tech-Electronics and Communication Engineering	1004173103	Computer Architecture	CO2	Understand the different instruction types and calculate the effective address of an operand by addressing modes.
	VR17	04	B.Tech-Electronics and Communication Engineering	10041/3103	and Organization	CO3	Demonstrate how a computer performs micro arithmetic operation.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Evaluate how the data transfer takes place using I/O mode, Interrupt, and DMA techniques with interfacing devices and data storage concepts.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	Understand the structure of commercially available digital integrated circuit families
39	VR17	04	B.Tech-Electronics and Communication Engineering		Digital IC	CO2	Learn the IEEE Standard 1076 Hardware Description Language (VHDL)
	VR17	04	B.Tech-Electronics and Communication Engineering		Applications	CO3	Model complex digital systems at several levels of abstractions, behavioural, structural, simulation, synthesis and rapid system prototyping
	VR17	04	B.Tech-Electronics and Communication Engineering	1004173104		CO4	Analyze and design basic digital circuits with combinatorial and sequential logic circuits using VHDL
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	Classify the fundamental characteristics of antennas (gain, bandwidth, directivity etc.) in order to compute a wireless communication link.
40	VR17	04	B.Tech-Electronics and Communication Engineering	1004173105	Antennas and Wave	CO2	Analyze different antenna arrays and patterns
	VR17	04	B.Tech-Electronics and Communication Engineering	1004173103	Propagation	CO3	Design the different antennas and thier properties
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Illustate the mechanism of the atmospheric effects on radio wave propagation
	VRI7	04	B.Tech-Electronics and Communication Engineering			CO1	Analyze the Linear and Non Linear waveshaping of RC Circuits
41	VR17	04	B.Tech-Electronics and Communication Engineering	100/172121	Integrated Circuits/Pulse	CO2	Interpret the different types of filter responses with operational amplifier and RC Circuits.
	VR17	04	B.Tech-Electronics and Communication Engineering	1004173121	and digital circuits Lab	CO3	Design an oscillators using op-amp
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Evaluate the Non Linear applications of Transistor, Op-amp and 555 timer.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Apply time division multiplexing concepts in different pulse modulation techniques.
12	VR17	04	B.Tech-Electronics and Communication Engineering	100/172127	Digital	CO2	Analyze different pulse digital modulation techniques.

44 1	- 12		155	10071/3144	Communicatio		
	VD17	0.4	B.Tech-Electronics		ns Lab		Design and implement different digital modulation
	VR17	04	and Communication			CO3	techniques and interpret the modulated and demodulated
			Engineering		1		waveforms.
			B.Tech-Electronics				
	VR17	04	and Communication			CO4	Identify and describe various encoding and decoding
			Engineering				techniques.
			B.Tech-Electronics				Implement design logic with Village of the EDC A
	VR17	04	and Communication	w/		COl	Implement design logic with Xilinx software on to FPGA hardware
			Engineering				laidware
			B.Tech-Electronics		l		Simulate and another than the state of the s
	VR17	04	and Communication		Di-is-Lig	CO2	Simulate and synthesize circuit design using Xilinx Vivado software
43			Engineering	1004173123	Digital IC		Software
7.5			B.Tech-Electronics	1004173123	Applications - Lab		
	VR17	04	and Communication		Lab	CO3	Design sequential logic circuits in VHDL, simulate and
			Engineering				synthesize design using Xilinx Vivado software
			B.Tech-Electronics				
	VR17	04	and Communication	Si		CO4	Compare and perform prelayout and post layout simulation
			Engineering				and program the FPGA hardware.
			B.Tech-Electronics				
	VR17	04	and Communication			COI	Discuss the importance of human values, harmony and
			Engineering				ethical behavior in real life situations
			B.Tech-Electronics				
-	VR17	04	and Communication			CO2	Describe the core values that shape the ethical behaviour of
			Engineering		Professional		an engineer
4			B.Tech-Electronics	1099172103	Ethics &		
	VR17	04	and Communication		Human Values	CO3	Recall basics of professional ethics and human values.
			Engineering			005	recent busies of professional edites and number values.
			B.Tech-Electronics		}		
	VR17	04	and Communication			CO4	Develop sustained happiness through identifying the
			Engineering				essentials of human values and skills.
			B.Tech-Electronics				Understand the concepts of architecture, memory
	VR17	04	and Communication			COI	organization of Intel 8086 microprocessor and ARM and
			Engineering			COI	Intel 8051 microcontrollers.
			B.Tech-Electronics				
	VR17	04	and Communication		Microprocesso	CO2	Demonstrate the concepts of addressing modes, instruction set of Intel 8086 microprocessor and Intel 8051 and ARM
		0,	Engineering		rs and	CO2	processor
45			B.Tech-Electronics	1004173201	Microcontroll		processor
	VR17	04	and Communication		ers	CO3	Write assembly language programs for simple problem
	' ' '	01	Engineering		•.5	COS	statements
			B.Tech-Electronics		1 1		
	VR17	04	and Communication		1 1	CO4	Design an interface between peripheral chips & processors
	1817	04	Engineering			CU4	and write programs for data transfer
			B.Tech-Electronics				
	VR17	04	and Communication		1 1	COL	Interpret ISO-OSI and TCP/IP models and various Network
	VKI/	04	1			COI	topology models
	\vdash		Engineering	-			
	UDIT	0.4	B.Tech-Electronics				Illustrate the concept of data framing and error control
	VR17	04	and Communication			CO2	mechanisms
46			Engineering	1004173202	Communicatio		
	,,,, _		B.Tech-Electronics	1	n Networks		Compare different types of routing protocols
	VR17	04	and Communication			CO3	
			Engineering				
			B.Tech-Electronics				Familiar with the World Wide Web concept
	VR17	04	and Communication			CO4	
			Engineering	2.00			
			B.Tech-Electronics				Compare the februaries sesses for MOS CMOS
	VR17	04	and Communication			COI	Compare the fabrication process for MOS,CMOS and
			Engineering				BICMOS technologies along with their electrical properti
			B.Tech-Electronics				
				1	1	CO2	Explain the concepts of design rules during the layout
	VR17	04	and Communication				
47	VR17	04	1				design.
47	VR17	04	and Communication Engineering	1004173203	VLSI design	·	
47	VR17	04	and Communication	1004173203	VLSI design	CO3	design. Estimate various scaling Models and factors and their effects on MOSFET parameters.

	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Evaluate various design issues of VLSI Circuits and illustrate FPGA Design.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Analyse the digital signals using various digital transforms DFT, FFT etc.
48	VR17	04	B.Tech-Electronics and Communication Engineering	1004173204	Digital Signal	CO2	Design and realize various digital filters for digital signal processing
	VR17	04	B.Tech-Electronics and Communication Engineering	1004112204	Processing	CO3	Evaluate the different multi rate digital signal processing systems.
	VRI7	04	B.Tech-Electronics and Communication Engineering			CO4	Illustrate the architecture of DSP processor
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Identify the basic concepts and various data model used in database design, design ER model for a given problem and formulate SQL queries.
49	VR17	04	B.Tech-Electronics and Communication Engineering	1004171706	Introduction to Data Base	CO2	Apply relational database theory and be able to describe relational algebra expression, tuple and domain relation expression from queries.
	VR17	04	B.Tech-Electronics and Communication Engineering	1004173206	Management systems	CO3	Intrepret the use of normalization and functional dependency, indexing and hashing technique used in database design.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Apply and relate the concept of transaction, concurrency control and recovery in database.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Install Python IDE and run basic Python scripts.
50	VR17	04	B.Tech-Electronics and Communication Engineering	1007177007	Introduction	CO2	Illustrate different operators, functions, key Concepts of Object Oriented Programming in python.
50	VR17	04	B.Tech-Electronics and Communication Engineering	1005173207	to Python Programming	CO3	Perform coding of complex designs by importing packages and modules
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Develop front end GUI using Visualization Libraries and Multithreading techniques.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	Identify the concepts and features of object oriented programming in Java.
51	VR17	04	B.Tech-Electronics and Communication Engineering	1005173208	JAVA	CO2	Describe and implement the programs with command line arguments and Scanner Class.
31	VR17	04	B.Tech-Electronics and Communication Engineering	1003173208	Programming	CO3	Analyze and implement the concepts of Inheritances and Multithreading with real world scenario.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Develop GUI programs using Applets and Event Handling.
- 0	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Summarize soft computing techniques and their applications
52	VR17	04	B.Tech-Electronics and Communication Engineering	1004173205	Soft Comuting	CO2	Analyze various neural network architectures
J4	VR17	04	B.Tech-Electronics and Communication Engineering		Techniques	CO3	Contrast perceptrons and counter propagation networks.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Asses different genetic algorithms and their applications.

			<u></u>				
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Identify Man instrument system and types of electrodes and transducers to extract bio potential signals
£2	VR17	04	B.Tech-Electronics and Communication Engineering	1004157004	Bio medical	CO2	Summarise Anatomy of heart, lungs, eye and ears. Devices to do tests on heart, lungs, eye and ears.
53	VR17	04	B.Tech-Electronics and Communication Engineering	1004173206	Instrumentatio - n	CO3	Identify and Monitor the health of patient in intensive care unit
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Illustrate Monitors, recorders and apply electrical accident prevention methods
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Connect openly on a global scale, with global learners and Instructors
54	VR17	04	B.Tech-Electronics and Communication Engineering	1004173291	MOOCs	CO2	Develop high quality learning using multimedia platform
54	VR17	04	B.Tech-Electronics and Communication Engineering	1004173291	WIGGES	CO3	Self assesment of their performance and learning process.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Adapt a life long learning culture and updating the knowledge according with emerging trends
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	Develop the necessary Algorithm and Assembly Language Program for the arithmetic and logical operations.
55	VR17	04	B.Tech-Electronics and Communication Engineering	1004173221	Microprocesso rs and Microcontroll ers Lab	CO2	Identify various interfacing cards and perform 8086 interfacing with different peripherals and implement Programs.
35	VR17	04	B.Tech-Electronics and Communication Engineering	1004173221		CO3	Implement different data transfer techniques with 8051 microcontroller.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Design a microcontroller interfacing circuits for simple applications
	VR17	04	B.Tech-Electronics and Communication Engineering		2	COI	Design the CMOS circuits for various combinational and sequential logic circuits using the mentor graphics tool.
5.6	VR17	04	B.Tech-Electronics and Communication Engineering			CO2	Estimate the Back end layout design of various circuits and analyse it interms of area, power and delay.
56	VR17	04	B.Tech-Electronics and Communication Engineering	1004173222	VLSI Lab	CO3	Explain the difference between layout and schematic using LVS tool.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Formulate various designs and verify the waveforms using eldo simulator tool.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Outline different signals and their operations.
	VR17	04	B.Tech-Electronics and Communication Engineering		Digital Signal	CO2	Examine Discrete Fourier Transform (DFT) and Inverse Discrete Fourier Transform (IDFT) of a sequence
57	VR17	04	B.Tech-Electronics and Communication Engineering	1004173223	Processing Lab	CO3	Estimate different digital filters.
	VR17	04	B.Tech-Electronics and Communication Engineering		:	CO4	Estimate Frequency Response Analysis of filter using window techniques.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	Summarise the concepts, characteristics, principles and operation of cellular systems

58	VR17	04	B.Tech-Electronics and Communication Engineering	1004174101	Cellular and Mobile	CO2	Apply Concepts, principles to Co-channel interference Reduction factor, Desired C/I, directional Antenna system and Cell splitting.
30	VR17	04	B.Tech-Electronics and Communication Engineering	1004174101	Communicatio ns		Analyse Point to point model, other cell coverage of signal and traffic, frequency and channel assignment strategies.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Compare concepts of handoff and architectures of GSM, Technology comparison of 3G, 4G and 5G cellular systems.
	VR17	04	B.Tech-Electronics and Communication Engineering		:	COl	Examine the fundamentals of gray scale and color image processing.
59	VR17	04	B.Tech-Electronics and Communication Engineering	1004174102	Digital Image	CO2	Apply different transforms and compression methods on image for image processing applications.
29	VR17	04	B.Tech-Electronics and Communication Engineering	1004174102	Processing	CO3	Analyze the methods to extract information from the image in terms of spatial filtering, frequency filtering, restoration and segmentation.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Validate the different techniques of color and multi resolution processing.
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Analyze the different modes of rectangular and circular waveguides
60	VR17	04	B.Tech-Electronics and Communication Engineering	1004174103	Microwave	CO2	Examine different microwave components and discuss different type of coupling mechanism
00	VR17	04	B.Tech-Electronics and Communication Engineering	1004174103	Engineering	CO3	Understand the working principles of microwave tube
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Compare the microwave solid state device
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Predict necessary components required in modern optical communications systems and summarize fiber characteristics
	VR17	04	B.Tech-Electronics and Communication Engineering	1004174104	Optical Communicatio	CO2	Determine electromagnetic modes in waveguides, various losses in an optical system, dispersion of optical fibers.
61	VR17	04	B.Tech-Electronics and Communication Engineering	1004174104 	ns	CO3	Analyze optical fiber and light wave systems using different types of photo detectors and optical test equipments.
	VR17	04	B.Tech-Electronics and Communication Engineering	1		CO4	Design, build, and demonstrate optical fiber communication system with budget analysis and performance characteristics.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	Contrast the Architecture, protocols and applications of IoT.
	VR17	04	B.Tech-Electronics and Communication Engineering	1	IoT & its	CO2	Analyse the communication protocols and standards used in Io
62	VR17	04	B.Tech-Electronics and Communication Engineering	1004174105	Applications	CO3	Design the simple IoT applications to monitor or control IoT devices using simulation or hardware
	VR17	04	B.Tech-Electronics and Communication Engineering	1		CO4	Implement the real time IoT applications.
	VR17	04	B.Tech-Electronics and Communication Engineering	I		COI	Describe the logic of Digital Circuits using Verilog hardware description language
63	VR17	04	B.Tech-Electronics and Communication Engineering		System Design	CO2	Capture the design of digital systems at highest level of abstractions like behavioural modelling

us			B.Tech-Electronics	10041/4100	unougn [construct the complex digital automout 1 and 5
	VR17	04	and Communication		Verilog	CO3	construct the complex digital systems at lower levels of abstractions like Dataflow and switch level
			Engineering		ľ	COS	abstractions like Datatiow and Switch [698]
			B.Tech-Electronics		l		Analyze and design basic digital circuits with combinatoria
	VR17	04	and Communication			CO4	and sequential logic circuits using Verilog
			Engineering	0			The state of the s
			B.Tech-Electronics				Develop the basic concepts and hardware components of an
	VR17	04	and Communication			COI	embedded system and able to know the design approach to
			Engineering				perform a specific function.
			B.Tech-Electronics		ĺĺ		
	VR17	04	and Communication		Embedded	CO2	Explain hardware components required for an embedded
64			Engineering	1004174107	Systems		system design.
			B.Tech-Electronics	1004174107	Design		Darian Unious ambaddad Samuel
- 8	VRI7	04	and Communication		555.5	CO3	Design various embedded firmware design approaches on embedded environment.
			Engineering				onbedded on Monnette.
	VR17	0.4	B.Tech-Electronics				Justify how to integrate hardware and firmware of an
	VKI/	04	and Communication			CO4	embedded system using real time operating system.
			Engineering B.Tech-Electronics				
	VR17	04	and Communication			COI	Summarize the concepts, developments of block type GPS
	' ' '	01	Engineering			COI	Satellites, principles and operation of GPS and Determining the receiver position in 2D, 3D Plane.
			B.Tech-Electronics				Apply Concepts, principles to GPS velocity calculations
	VR17	04	and Communication			CO2	and Geo-augmented navigation (GAGAN) architecture.
			Engineering	1004174100	Global		(Trong and the state of the st
0			B.Tech-Electronics	1004174108	Positioning System(GPS)		Asses geometric, covariance analysis, and GPS/INS
	VR17	04	and Communication		System(GPS)	CO3	integration architectures.
			Engineering				
			B.Tech-Electronics				Analyse Observation data and navigation message data
	VR17	04	and Communication			CO4	parameters.
			Engineering				
22	VR17	04	B.Tech-Electronics and Communication				Identify Methods in AI that may be suited to solve a given
	VKI/	U4	Engineering			COI	problem and Game Playing
			B.Tech-Electronics				Domonstante Al country of the second of the
	VR17	04	and Communication			CO2	Demonstrate Al search algorithms and formalizations on real world problems
		42 *	Engineering		Artificial	CO2	Total world problems
66			B.Tech-Electronics	1004174109	Intelligence	·	Analyze the basic issues of different types of knowledge
	VR17	04	and Communication			CO3	representation techniques to build intelligent system
			Engineering				, , , , , , , , , , , , , , , , , , , ,
			B.Tech-Electronics		1	-	Apply probabilistic and fuzzy models to solve problems
	VR17	04	and Communication			CO4	with uncertainty.
_			Engineering				
			B.Tech-Electronics				Explain the Field of Artificial Intelligence from general AI
	VR17	04	and Communication			COI	to self-driving cars.
			Engineering		1		
	VR17	04	B.Tech-Electronics				Analysis and synthesis of speech using different
	VKI	04	and Communication Engineering		Carack	CO2	technologies, explain how they work, and discuss their
67			B.Tech-Electronics	1004174110	Speech Processing		strengths and limitations.
	VR17	04	and Communication		Frocessing	CO3	Illustrate the working principles of Tube type Microwave sources and its applications and advantages.
	1 1	04	Engineering			COS	sources and its applications and advantages.
			B.Tech-Electronics				summarize the applications of different Speech methods
	VR17	04	and Communication		1	CO4	(TTS, ASR and spoken language acquisition)
			Engineering		1 1		(, class approximation and antition)
			B.Tech-Electronics				Interpret the role of miniaturization in microelectronic
	VR17	04	and Communication			COI	devices and scaling rules of MEMS.
			Engineering				
		_	B.Tech-Electronics				Articulate the techniques for building the microelectronic
	VR17	04	and Communication		Micro	CO2	devices on various types materials.
68			Engineering	1004174111	Electromechan		<u> </u>
-			B.Tech-Electronics		ical Systems		Deduce the Microsystems technology for technical
	VR17	04	and Communication		(MEMS	CO3	feasibility.
			Engineering				-

Ī			B.Tech-Electronics	1	ſ		Design MEMS based micro systems and micro devices.
	VR17	04	and Communication Engineering			CO4	
	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Summarize the mechanism of OS to handle process and threads and their communication
60	VR17	04	B.Tech-Electronics and Communication Engineering		Operating Systems	CO2	Demonstrate OS architecture, mutual exclusion algorithms, deadlock detection algorithms.
69	VR17	04	B.Tech-Electronics and Communication Engineering	1005172206		CO3	Describe the components and aspects of concurrency management
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Examine the mechanism involved in memory management in contemporary OS.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	Examine the characteristics of Microwave sources , directional couplers and optical devices.
	VR17	04	B.Tech-Electronics and Communication Engineering		Microwave engineering &	CO2	Evaluate different microwave parameters with respect to microwave sources.
70	VR17	04	B.Tech-Electronics and Communication Engineering	1004174121	Optical Communications Lab	CO3	Determine the optical loss characteristics and optical source and detectors in optical fibers
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Measure data rate , numerical aperture and losses in optical link
	VR17	04	B.Tech-Electronics and Communication Engineering	0 1		COI	Examine the fundamentals of gray scale and color image processing.
	VR17	04	B.Tech-Electronics and Communication Engineering	1004174122	Digital Image Processing Lab	CO2	Apply different transforms and compression methods on image for image processing applications.
71	VR17	04	B.Tech-Electronics and Communication Engineering			CO3	Analyze the methods to extract information from the image in terms of spatial filtering, frequency filtering, restoration
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	and segmentation. Experiment the different techniques of color and multi resolution processing.
	VR17	04	B.Tech-Electronics and Communication			CO1	Evaluate Privacy Issues
	VR17	04	B.Tech-Electronics and Communication			CO2	Demonstrate the importance of Copyrights, Trademarks & Trade Secrets
72	VR17	04	Engineering B.Tech-Electronics and Communication	1099173101	IPR & patents	CO3	Apply Patent Rights for New Innovations
	VR17	04	B.Tech-Electronics and Communication			CO4	Evaluate Privacy Issues
	VR17	04	B.Tech-Electronics and Communication			COI	Create an Industrial environment and culture within the institution.
73	VR17	04	B.Tech-Electronics and Communication Engineering	1004173241	Industry Oriented Mini	CO2	Provide students hands on experience on, troubleshooting, maintenance, fabrication, innovation, record keeping, documentation etc thereby enhancing the skill and competency part of technical education.
	VR17	04	B.Tech-Electronics and Communication Engineering		Project	CO3	Inculcate innovative thinking and thereby preparing students to help soceity as an engineer
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Develop skill to build design techniques for various problem analysis.

	VR17	04	B.Tech-Electronics and Communication Engineering			COI	Interpret orbital mechanics and launch methodologies
74	VR17	04	B.Tech-Electronics and Communication Engineering	1004174201	Satellite Communications	CO2	Apply Concepts of Attitude and orbit control, telemetry, tracking, Command and monitoring, communication in satellite subsystems.
/4	VR17	04	B.Tech-Electronics and Communication Engineering	1004174201		CO3	Design link power budget for satellites
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Compare satellite access techniques
	VR17	04	B.Tech-Electronics and Communication Engineering			CO1	Compare the fundamentals of static, dynamic characteristics and different errors used in the context of measuring instruments.
75	VR17	04	B.Tech-Electronics and Communication Engineering	1004174202	Electronic Measurements and	CO2	Analyze the functions of Oscilloscopes, signal generators, analyzers and Calculate amplitude, frequency and phase of the signals
,,	VR17	04	B.Tech-Electronics and Communication Engineering	1004174202	Instrumentatio n	CO3	Design the Balancing conditions of the bridges to Calculate the unknown values of Resistor, Capacitor and Inductor.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Asscess the performance of different transducers to Measure different parameters such as velocity, humidity, speed, proximity.
	VR17	04	B.Tech-Electronics and Communication Engineering	1004174203		COI	Interpret the factors affecting the radar performance using Radar Range Equation.
76	VR17	04	B.Tech-Electronics and Communication Engineering		Radar Systems	CO2	Apply the principle of FMCW radar in the design of altimeter.
, 0	VR17	04	B.Tech-Electronics and Communication Engineering			CO3	Analyze the principle of each and every block of MTI and Tracking Radar
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Demonstrate the basic principle of Receiver and also extraction of signal in Noise
188	VR17	04	B.Tech-Electronics and Communication Engineering	00. 33		CO1	Judge the significance of exploratory data analysis (EDA) in data science and Apply plots, graphs, summary statistics to carry out EDA and the data science process in a case study.
P	VR17	04	B.Tech-Electronics and Communication Engineering	1004174204	Data Science	CO2	Apply machine learning algorithms for predictive modelling and Explain why Linear Regression and k-NN are poor choices for Filtering Spam than better Naive Bayes.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO3	Analyse algorithmic ingredients that constitute a Recommendation Engine, build their own recommendation system using existing components.
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Asses the concepts of Data Science, the skill sets needed to be a data scientist and Identify probability distributions for statistical modelling and Fit a model to data.
	VR17	04	B.Tech-Electronics and Communication Engineering		\$100 B.A.	COI	Examine various sources of power dissipation in VLSI circuit design
	VR17	04	B.Tech-Electronics and Communication Engineering	1004174205	Low Power	CO2	Illustrate different approaches to design a low power circuit
	VR17	04	B.Tech-Electronics and Communication Engineering		VLSI Design	CO3	Analyze various low power adders and multiplier architectures and extend them to different applications.
78	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Design various low power memories and compare them

			B.Tech-Electronics			-	Apply communication concepts to solve wireless
	VR17	04	and Communication			COI	communications problems.
			Engineering B.Tech-Electronics				Summarize existing model's and apply cellular system
	VR17	04	and Communication		Wireless		design concepts, wireless wide area networks for their
79			Engineering	1004154307	004174206 Communicatio n and	CO2	performance analysis.
19			B.Tech-Electronics	1004174206			Analyse various multiple access schemes used in wireless
	VR17	04	and Communication		Networking	CO ₃	communications and existing and emerging wireless
			Engineering				standards.
	VD17	0.4	B.Tech-Electronics				Demonstrate wireless local area networks and their
	VR17	04	and Communication Engineering		[[CO4	specifications. Apply the concepts to orthogonal frequency
			B.Tech-Electronics	0.02.00			division multiplexing. Apply the mathematical foundations for recognition of
	VR17	04	and Communication			COI	patterns
			Engineering				
			B.Tech-Electronics				Develop the principles of statistical pattern recognition and
	VR17	04	and Communication			CO2	apply non parametric techniques in pattern recognition in
80			Engineering	1004174207	Pattern		real time applications
	VD12	0.4	B.Tech-Electronics		Recognition		Demonstrate maximum likelihood and Bayesian parameter
	VR17	04	and Communication Engineering			CO3	estimation for hidden Markov models.
			B.Tech-Electronics				Justify real time applications in image pattern recognition.
	VR17	04	and Communication			CO4	addity feat time applications in mage pattern recognition.
	6 I		Engineering			•••	
			B.Tech-Electronics				
	VR17	04	and Communication			COI	Model the concepts and engineering tools to arrive at design solutions for the identified engineering problem in industry
			Engineering				solutions for the identified engineering problem in middsity
		0.4	B.Tech-Electronics				Exhibit critical thinking and problem solving skills by
	VR17	04	and Communication			CO2	analysing underlying issues to challenges
81			Engineering B.Tech-Electronics	1004174281	Internship	<u> </u>	Solve seel life shalloness in the worksless by analysis
	VR17	04	and Communication			CO3	Solve real life challenges in the workplace by analysing work environment and conditions, and selecting appropriate
			Engineering				skill sets acquired from the course
		-	B.Tech-Electronics		Y		Articulate career options by considering opportunities in
	VR17	04	and Communication			CO4	company, sector, industry, professional and educational
			Engineering				advancement;
	VR17	04	B.Tech-Electronics and Communication			COI	Relate literature to formulate problem statements of
	VKI/	04	Engineering			Coi	technology and innovations
			B.Tech-Electronics	· ·	l,		Develop documentation, presentation and communication
	VR17	04	and Communication			CO2	skills for prefession and personal growth following ethical
82			Engineering	1004174251	Technical		values
			B.Tech-Electronics	1004174231	Seminar		
	VR17	04	and Communication	20		CO3	Identify new directions in Multidisciplinary area
			Engineering	-		<u> </u>	
	VR17	04	B.Tech-Electronics and Communication			CO4	Assess engineering solution and its applications for Real
	****/	"	Engineering			204	time problem
			B.Tech-Electronics				Demonstrate the application of the knowledge acquired in
	VR17	04	and Communication			COI	the Electronica and communication domain to solve the
			Engineering	1			problems of the various forms of instituions
			B.Tech-Electronics				Interpret the practical difficulties in applying the various
	VR17	04	and Communication			CO2	forms of solutions to find the feasible solution.
83	<u> </u>		Engineering	1004174261	Comprehensiv		The temporal potanton
	VR17	04	B.Tech-Electronics and Communication		e Viva	CO3	Solve the real life problems and assess the implications of
	T VINI	04	Engineering		1	(03	various forms of solutions.
	1		B.Tech-Electronics	1			
İ	VR17	04	and Communication			CO4	Exhibit professional etiquette suitable for career progression
			Engineering				and Present their views cogently and precisely
			B.Tech-Electronics				Apply knowledge of Electronics and communication
			1	10	1	COI	
	VR17	04	and Communication Engineering		1	LOI	engineering fundamentals to solve the complex Engineering problems

84	VR17	04	B.Tech-Electronics and Communication Engineering	1004174231	Main Project	CO2	Design prototypes and solutions to solve the specific needs related with public health, safety, society and environment leading to sustainable development following ethical values
:	VR17	04	B.Tech-Electronics and Communication Engineering			CO3	Adapt appropriate techniques, resources and modern engineering tools during the implementation of project
	VR17	04	B.Tech-Electronics and Communication Engineering			CO4	Develop a multidisciplinary project leading to the ability of engagement in lifelong learning and self-development



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	-						CHNOLOGY(A) ENGINEERING
			Directi Lei		URSE OUTC		ENGINEERING
S.No	Regula tion	Program me Code	Programme Name	Course Code	Course Name	СО	Course Outcome: After the completion of the course student will be able to
	VR17	02	B.Tech-Electrical and Electronics Engineering		:	COI	Enhance English Language by relating the ideas of eminent personalities.
	VR17	02	B.Tech-Electrical and Electronics Engineering		ENGLISH-	CO2	Articulate the technological advancements fluently.
1	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171101	1	CO3	Inculcate the art of thinking and writing clearly and logically.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Enact various themes through team work and learn the usage of vocabulary through humourous texts.
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Solve the first and higher order linear differential equations.
2	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171102	МАТНЕМ	CO2	Estimate extrema and series expansions of functions of several variables.
2	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171102	ATICS-1	CO3	Interpret area and volume using double integral and triple integral.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Evaluate of solution of Ordinary differential equations by using Laplace Transform technique.
	VR17	02	B.Tech-Electrical and Electronics Engineering		COMPUTE R PROGRA MMING USING C	CO1	Write compile and debug Programs in C language
3	VR17	02	B.Tech-Electrical and Electronics Engineering			CO2	Use operators, data types and write programs
J	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171105		CO3	Select the best loop construct for a given problem
0	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Design and implement C programs
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Understand the use of drawing instruments to construct the polygons and curves
	VR17	02	B.Tech-Electrical and Electronics Engineering		ENGINEE	CO2	Draw isometric views of simple objects
4	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171106	RING DRAWING	CO3	Learn the principle of orthographic projections. Draw Orthographic projections of points, lines.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Draw the various types of planes and solids its views in different Positions
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Describe the wave phenomena of light and working principle of optical instruments.
	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171107	APPLIED	CO2	Apply the knowledge of basic quantum mechanics to understand wave equation.

ا ر	VR17	02	B.Tech-Electrical and Electronics Engineering	1000111101	PHYSICS	CO3	Understanding the basic knowledge of free electon theory of materials.
	VR17	02	B.Tech-Electrical and Electronics Engineering		Caracina a	CO4	Make use of the basic concepts of energy bands in crystalline solids to understand semiconductor physics.
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Elucidate the natural resource & their importance for the sustenance of life and recognises the need to conserve natural resource
6	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171112	ENVIRON MENTAL	CO2	Gives the broad view on the various attributes of pollution & and their impact & measure to reduce he pollution along with waste management
	VR17	02	B.Tech-Electrical and Electronics Engineering		STUDIES	CO3	Debates on social issues both rural and urban environment possible means to combat the challenges and trace the legislation of India towards sustainability
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Educates about Environmental Impact Assessment, Environmental Impact Statement & Environmental Audit
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Apply the usage of phonemes while referring to the dictionary
7	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171101	ENGLISH COMMUNI CATION	CO2	Articulate with others by using proper functions.
7	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171121	SKILLS LABORAT ORY-I	CO3	Enact the roles with proper body language.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Communicate fluently with proper pronunciation
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Experimentation of laws of vibrations in strenteched string
D	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171100	ENG PHYSICS LAB	CO2	Determination of velocity of sound, rigidity modulus of a wire, acceleration due to gravity, radius of gyration and Planck's constant.
8	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171122		CO3	Analyze the voltage vs. current characteristics of Zener diode and temperature vs. resistance characteristics of a thermistor
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Demonstration of formation Newton's rings, diffraction pattern using grating and induced magnetic field in a cirucuclar coil.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Understand C programming development environment, compiling, debugging, and linking and executing a program using the development environment
9	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171128	C PROGRA	CO2	Analyzing the complexity of problems, Modularize the problems into small modules and then convert them into programs
	VR17	02	B.Tech-Electrical and Electronics Engineering		MMING lab	CO3	Understand and apply the in-built functions and customized functions for solving the problems.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Understand and apply the pointers, memory allocation techniques and use of files for dealing with variety of problems.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Develop communication skills by inferring the technological advancements.

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	VR17	02	B.Tech-Electrical and Electronics Engineering		ENGLISH-	CO2	Identify the life of eminent personalities.
10	VR17	02	B.Tech-Electrical and Electronics	1000171201	II	CO3	Relate the importance of Environment and its sustainability to language learning
	VR17	02	Engineering B.Tech-Electrical and Electronics Engineering			CO4	Create the art of writing by applying apt vocabulary and grammar.
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Estimate numerical solution of non Linear equation.
	VR17	02	B.Tech-Electrical and Electronics Engineering	1000151005	MATHEM	CO2	Construct Interpolating polynomial for the given data.
11	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171202	ATICS-II	CO3	Calculate Numerical Solution of ODE and Numerical Integration.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Evaluate Fourier series and Fourier transforms for functions.
	VR17	02	B.Tech-Electrical and Electronics Engineering			C01	Solve simultaneous linear equations numerically using rank of a matrix and also Eigen values and Eigen vectors of a square matrix.
12	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171203	MATHEM	CO2	Identify and solve partial differential equations.
	VR17	02	B.Tech-Electrical and Electronics Engineering		ATICS-III	CO3	Calculate gradient of a scalar function, divergence and curl of a vector function.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Evaluate line, surface and volume integrals using appropriate integral theorems.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Solve various Electrical networks in the presence of active and passive elements.
	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171000	Electrical	CO2	Compare Electric and Magnetic Circuits and solve Magnetic circuits with Dot convention
L'a	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171208	Circuit Analysis - I	CO3	Illustrate R, L, C networks and solve various networks with AC excitation including Resonance
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Analyze various Electrical networks using Network theorems for both DC and AC excitations.
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Identify different polymers and their Engineering applications.
	VR17	02	B.Tech-Electrical and Electronics Engineering		Applied	CO2	Desribe various renwable and non- renwable energy resources.
14	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171211	CHEMIST RY	CO3	Aquire the knoweldge of mechanism and principles measures of corrosion.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Illustrate green Synthesis, semi conductors, super conductors and their applications in industry.
	VR17	02	B.Tech-Electrical and Electronics			COI	Analyze the force systems for equilibrium conditions and able to draw free body diagram.

	VR17	02	B.Tech-Electrical and Electronics Engineering			CO2	Evaluate the frictional forces between contact surfaces.
15	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171216	Engineering Mechanics	CO3	Able to differentiate between centroid and centre of gravity and determine Centroid, centre of gravity and second moment of area for composite sections
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Analyse the motion and calculate trajectory characteristics.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Apply the usage of phonemes while referring to the dictionary
16	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171221	ENGLISH COMMUNI CATION	CO2	Articulate with others by using proper functions.
10	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171221	SKILLS LAB-2	CO3	Enact the roles with proper body language.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Communicate fluently with proper pronunciation
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Study and practice on machine tools and their operations
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO2	Practice on manufacturing of components using workshop trades including pluming, fitting, carpentry, foundry, house wiring and welding
17	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171224	ENG workshop	CO3	Identify and apply suitable tools for different trades of Engineering processes including drilling, material removing, measuring, chiselling carpentry practice
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Apply basic engineering knowledge for carpentry practice
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Learn and apply basic techniques used in Chemistry laboratory for small/medium scale water analysis.
18	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171227	ENGINEE RING	CO2	Estimate the metal ions present in a domestic/industry sample solutions.
10-	VR17	02	B.Tech-Electrical and Electronics Engineering	1000171227	CHEMIST RYLAB	CO3	Utilize the fundamental laboratory techniques for titrations and synthetic procedures.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Analyze data and gain experimental skills through instrumentation
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Understand the measurement of three-phase power under balanced and unbalanced load condition.
100	VR17	02	B.Tech-Electrical and Electronics Engineering	100313313	Electrical	CO2	Analyze transient response of the electrical networks with DC and AC excitation.
19	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172101	circuit analysis-II	CO3	Determine the two port network parameters for different types of electrical networks.
C.	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Estimate the different harmonic components from response of a electrical network using Fourier Series and Fourier Transform

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	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Understand the principles of electromechanical energy conversion, construction and operation of a DC Machines, single phase and polyphase transformers.			
20	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172102	ELECTRIC AL MACHINE	CO2	Analyze the characteristics of DC machines and transformers.			
	VR17	02	B.Tech-Electrical and Electronics Engineering		S I	CO3	Compare the speed control techniques of dc motors and working of starters			
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Assess the performance through testing methods of DC machines and transformers			
	VR17	02	B.Tech-Electrical and Electronics Engineering			C01	Distinguish the characteristics of different diodes and choose appropriate diode for an application based on the operation			
21	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172103	BASIC ELECTRO NIC	CO2	Explain the operation and design aspects of rectifiers, filters and regulators			
	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172103	DEVICES & CIRCUITS	CO3	Design different biasing and stabilization circuits and explain compensation techniques for a transistor			
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Explain the merits and demerits of positive and negative feedback and the role of feedback in oscillators and amplifiers			
	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172104		C01	Calculate electric field from various charge distributions and find magnetic field from various current distributions			
22	VR17	02	B.Tech-Electrical and Electronics Engineering		ELECTRO MAGNETI	CO2	Determine polarization in dielectrics, electric current density, and resistance of conductors and also Calculate force in electric and magnetic fields and torque in magnetic fields			
	VR17	02	B.Tech-Electrical and Electronics Engineering		C FIELD	CO3	Compute inductance, capacitance of different physical configurations			
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Apply Faraday's Law to Find induced Emf.			
•	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Explain the basic cycles and calculations involved in the operation of steam and gas turbines.			
	VR17	02	B.Tech-Electrical and Electronics Engineering		THERMAL	CO2	Discuss the operation and performance of reciprocating and centrifugal pumps			
23	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172105	AND HYDRO PRIME MOVERS	CO3	Acquire basic knowledge of turbo machines and describe the working of Pelton, Francis and Kaplan Turbines along with their performance parameters.			
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Summarize the layout and components in a hydro electric power plant and extend their knowledge to power plant economics with suiatble ethics and calculations			
	VRI7	02	B.Tech-Electrical and Electronics Engineering			CO1	Build the magnetisation characteristics of a Dc generator.			
0.1	VR17	02	B.Tech-Electrical and Electronics Engineering		Electrical Machines lab -I	1 1	Electrical	Electrical	CO2	Determine and predetermine the performance of DC machines and single phase transformer.
24	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172121		CO3	Demonstrate to Control the speed of DC motors.			

ſ		063.3	B.Tech-Electrical	I	Γ	-	Explain the parallel operation of single phase
	VR17	02	and Electronics Engineering			CO4	transformer and Scott connection.
!	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Analyze the electrical networks with various network theorems
	VR17	02	B.Tech-Electrical and Electronics Engineering		AL MACHINE	CO2	Illustrate Resonance and Locus diagrams for various R, L, C circuits
25	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172122	S -I LABORAT ORY	CO3	Solve two port network parameters and coefficeient of coupling for coupled circuit
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Understand the measurement of three phase power under balanced & unbalanced load conditions
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Determine the force exerted by a jet of water on a flat and curved vane
26	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172123	HYDRAUL IC	CO2	Compare the performance on various turbines
(VR17	02	B.Tech-Electrical and Electronics Engineering	1002172123	MACHINE RY LAB	CO3	Analyze the performance of single and multistage pumps
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Compute slip of a Reciprocating Pump.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Compare the construction and operation of induction motors, BLDC motors, SRM, universal motors and sychronous machines
27	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172201	ELECTRIC AL	CO2	Interpret the torque producing mechanism,testing methods of induction motors and regulation of synchronous machines
27	VR17	02	B.Tech-Electrical and Electronics Engineering		MACHINE S-II	CO3	Analyze various starting methods, pasor diagram and equivalent circuit of induction motors and synchronous machines
	VR17	02	B.Tech-Electrical and Electronics Engineering		:	CO4	Evaluate the performance of induction motors and sychronous machines.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Derive the transfer function and state space models for electrical,mechanical and electro- mech systems
20	VR17	02	B.Tech-Electrical and Electronics Engineering	1000177700	CONTROL	CO2	Analyze the Transient & Steady State Performance of a different system.
28	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172202	SYSTEMS	CO3	Determine the stability of different Linear Time Invarient systems.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Design lag,lead and lag-lead compensators for different systems to improve system performance
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Understand the layout of Thermal, Wind, Hydro, Nuclear, Solar, Gas, Geothermal and OTEC power stations.
	VR17	02	B.Tech-Electrical and Electronics Engineering		POWER GENERAT ION	CO2	Examine the operation of power plants and Fuel cells.
29	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172203	ENGINEE RING & ECONOMI CS	CO3	Compare and contrast the energy scenario and tariffs in India and the World.

	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Design a PV system for given load specifications.
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Diagnose and trouble-shoot linear and non-linear electronic circuits.
361	VR17	02	B.Tech-Electrical and Electronics Engineering		ANALOG	CO2	Apply the proper semiconductor device depending upon application considering economic and technology upgradation
30	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172204	ELECTRO NIS	CO3	Analyze amplifier configurations to obtain the required specifications
	VR17	02	B.Tech-Electrical and Electronics Engineering	200		CO4	Design waveform generators (Astable, Mono stable, Schmitt Trigger) using Single Op-Amp. Study of 555 timer & its applications using Astable and Mono stable Operations.
	VR17	02	B.Tech-Electrical and Electronics Engineering			Ç01	Understand and construct single, double, and circular linked-lists
	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172205	DATA	CO2	Prepare Stacks and Queues using array and linked-list representations
	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172203	STRUCTU RES	CO3	Develop programs by using non linear data structures such as trees ,graphs
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Design different applications of advanced data structures
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Analyze the Demand, Price and Cost.
32	VR17	02	B.Tech-Electrical and Electronics Engineering	1099172206	MANAGE RIAL ECONOMI	CO2	Identify the Nature of different markets to determine Price Output for different Business Units
32	VR17	02	B.Tech-Electrical and Electronics Engineering	1099172206	CS & FINANCIA L ANALYSIS	CO3	Prepare and analyze Financial Statements
	VR17	02	B.Tech-Electrical and Electronics Engineering		ANALISIS	CO4	Evaluate investment project proposals
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Determine the regulation and Xd and Xq values of alternators
33	VR17	02	B.Tech-Electrical and Electronics Engineering	100217222	ELECTRIC AL MACHINE	CO2	Control the speed and improve the power factor of Induction Motor
33	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172221	S-II LABORAT ORY	CO3	Analyze the equivalent circuit of induction motor
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Assess the performance of induction motor and BLDC motors by conducting various tests
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Identify the characteristics of various diodes and select the best diode for a certain application based on the operation.
34	VR17	02	B.Tech-Electrical and Electronics Engineering	100217222	ELECTRO NIC DEVICES	CO2	To Measure voltage, frequency and phase of any waveform using CRO
34	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172222	AND CIRCUITS LABORAT ORY	I CO3	Understand the functioning and features of the transistor CE amplifier

	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Analyze the concepts of BJT, UJT and FET devices
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Analyze a complex engineering problem and to apply principles of civil engineering and relevant disciplines to identify solutions
35	VR17	02	B.Tech-Electrical and Electronics Engineering		INDUSTRI AL VISIT	CO2	Design, implement, and evaluate a solution to meet the requirements in the context of the civil engineering program's discipline
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO3	Apply civil engineering fundamentals to produce proper solutions to real world problems.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Recognize professional responsibilities and make informed judgments in civil practice based on legal and ethical principles.
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Determine sag, tension in transmission lines and differentiate overhead line insulators.
36	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173101	Power transmissio	CO2	Understand various parameters of transmission lines and underground cables.
	VRI7	02	B.Tech-Electrical and Electronics Engineering	1002173101	n Engineering	CO3	Analyse the factors affecting the performance of transmission lines.
	VR17	02	B.Tech-Electrical and Electronics Engineering	s. — du		CO4	Evaluate performance of long transmission lines and power system transients.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Characterize the signals and systems and principles of vector spaces, Concept of orthogonality
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO2	Analyze the continuous-time signals and continuous-time systems using Fourier series, Fourier transform and Laplace transform.
37	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173102	Signals and Systems	CO3	Apply sampling theorem to convert continuous- time signals to discrete-time signal and also apply z-transform to analyze discrete-time signals and systems
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Illustrate the relationships among the various representations of LTI systems and apply the Concepts of convolution, correlation, Energy and Power density spectrums to communication problems.
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Describe the working principle and constructional features of different types of analog and digital measuring instrument for measurement of voltage, current, resistance, power, power factor, energy, frequency, phase difference and magnetic measurements.
38	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173104	Electrical Measureme nts	CO2	Calibrate voltmeter, ammeter, energy meter by suitable methods.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO3	Select suitable bridge for measurement of electrical parameters.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Measure voltage, current, resistance by using potentiometer and frequency and phase difference between signals using CRO.
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Examine the operation of DC-AC inverter circuits and AC-AC converters

	VR17	02	B.Tech-Electrical and Electronics Engineering		Power	CO2	Apply minimization techniques like boolean algebra and K-maps.
39	VR17	02	B.Tech-Electrical and Electronics	1002173105	Electronics		Analyze Combinational Logic Circuits and sequential logic circuits
	VR17	02	Engineering B.Tech-Electrical and Electronics Engineering			CO3	Design Combinational logic circuits and Sequential Logic Circuits.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Understand the Number Systems and their conversions and Describe about Logic Gates and logic families.
	VR17	02	B.Tech-Electrical and Electronics Engineering		Digital	CO2	Apply minimization techniques like boolean algebra and K-maps.
40	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173106	Electronics	CO3	Analyze Combinational Logic Circuits and sequential logic circuits
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Design Combinational logic circuits and Sequential Logic Circuits.
	VR17	02	B.Tech-Electrical and Electronics Engineering	r.		COI	Explain about characteristics of various power semiconductor devices and firing circuits.
41	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172121	Power	CO2	Analyze the performance of single-phase and three-phase full-wave bridge converters with both resistive and inductive loads.
41	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173121	Electronics Lab	CO3	Illustrate the working of Buck converter, Boost converter, single-phase square wave inverter an PWM inverter.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Describe the operation of single phase AC voltage regulator with resistive loads.
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Analyze the performance and working of magnetic amplifier, D.C and A.C servo motor ar Synchro Transmitter and Receiver
12	VR17	02	B.Tech-Electrical and Electronics Engineering	1002172122	Control	CO2	Determine the transfer function of a DC motor and compare P,PI,PD and PID controllers.
42	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173122	Systems Lab	CO3	Understand the working of PID controller in temperature control application and position control systems
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Design Lag, lead compensators by using Simulation.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Select the appropriate data structure and analyze the performance of algorithms.
40	VR17	02	B.Tech-Electrical and Electronics Engineering	1000153161	Data	CO2	Develop single,double and circular linked lists
43	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173123	Structures Lab	CO3	Implement stacks and queues using arrays and linked lists
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Design programs by nonlinear data structures such as tree and graphs
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Explain the Fundamentals of electric drive and different electric braking methods.

	VR17	02	B.Tech-Electrical and Electronics Engineering	4004.	Power Electronic	CO2	Analyze the speed control DC motors through controlled converters (1- phase) and choppers.
44	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173201	Controllers &Drives	CO3	Differentiate the stator side control and rotor side control of three phase induction motor using power converters.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Describe VSI, PWM tecniques to control the synchronous motor
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Understanding the perunit quantities, develop impedence diagram and formulate Y-Bus and Z-Bus.
4.5	VR17	02	B.Tech-Electrical and Electronics Engineering	400045000	Power	CO2	Apply power flow solution methods for the given power system network.
45	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173202	System Analysis	CO3	Solve short circuit currents for symmetrical and unsymmetrical faults.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Analyze the steady state and transient stability of power systems.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Understand the differanent RES and MPPT techniques to extract the Maximum Power
	VR17	02	B.Tech-Electrical and Electronics Engineering		Renewable	CO2	Analyze standalone and grid connected wind and PV systems
46	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173203	Energy Systems	CO3	Design The solar PV as stand allown and grid connected mode
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Design The Hybrid Energy System
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Demonstarte the architecture of microprocessors and microcontrollers.
47	VR17	02	B.Tech-Electrical and Electronics Engineering		Microproce ssors and	CO2	Implement interfacing circuits to microprocessor or a microcontroller suitable for the given application
47	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173204	Microcontr ollers	CO3	Develop assembly language program in 8085,8086 and 8051 for various applications.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Design and Develop interfacing circuit for any industrial application and write a coding for that
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Explain the concepts and drive train configurations of electric drive vehicles
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO2	Describe different electric propulsion systems and energy storage devices
48	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173205	Electric Vehicles	CO3	Discuss the technology, design methodologies and control strategy of electric vehicles.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Explain battery charger topologies for electric vehicles and discuss how the sizing of the drive system is done and energy management strategie used in electric.
	VRI7	02	B.Tech-Electrical and Electronics Engineering			COI	To define an objective function and constraint functions in terms of design variables, and then state the optimization problem.

49	VR17	02	B.Tech-Electrical and Electronics Engineering	100017000	Optimizatio	CO2	To solve single variable and multi variable optimization problems, without and with constraints.
49	VRI7	02	B.Tech-Electrical and Electronics Engineering	1002173206	n Techniques	CO3	To apply linear and non-linear programming technique to an optimization problem.
	VRI7	02	B.Tech-Electrical and Electronics Engineering			CO4	To explain basic principles of Genetic Algorithms and Particle Swarm Optimization methods
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	To understand the characteristics of signals their representation
50	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173207	Instrumenta	CO2	To interpret the operation of transducers
	VR17	02	B.Tech-Electrical and Electronics Engineering		tion	CO3	To analyze the Measurement of Non-Electrical Quantities
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	To evaluate Signal Analyzers
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Understand the performance and principle of operation of stepper motor, Switch d reluctance motor, PMDC, PM Materials and BLDC motors
51	VR17	02	B.Tech-Electrical and Electronics Engineering	100017000	Special	CO2	Implement different control and switching circuits for stepper motor, SRM, BLDC motors
21	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173208	Electrical Machines	CO3	Analyse the theory of travelling magnetic field and identify the applications of linear motors in electric traction
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Design the constructional features of Switched reluctance motor
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Summarise different models of artificial neuron, learning rules and different paradigms of ANN.
52	VR17	02	B.Tech-Electrical and Electronics Engineering	1000177000	Neural Networks &	CO2	Analyse and test Associative Memories and Hopfield Networks.
(VR17	02	B.Tech-Electrical and Electronics Engineering	1002173209	Fuzzy Logic	CO3	Classify classical and fuzzy sets and perform operations on fuzzy relations.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Apply Neural Networks and fuzzy logic for Power System and Speed control of DC Motor
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Understand principles of energy auditing and propose energy conservation schemes
	VR17	02	B.Tech-Electrical and Electronics Engineering		Energy Audit and	CO2	Demonstrate principle and organizing energy management program
53	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173210	n & Managemen	CO3	Analyze power factor improvement methods, the operating principle of energy efficient motors, Space Heating, Ventilation and Energy Instruments
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Compute and analyze the economic aspects of energy consumption

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	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Mesurement of electrical perameters Voltage, Current, Active and Reactive power, Energy, Resistance, Inductance, Capacitance and Impedance.
54	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173221	Electrical Measureme	CO2	Explain about instrument transformers and their application and use
	VR17	02	B.Tech-Electrical and Electronics Engineering		nts Lab	CO3	Calibrate Voltmeter, Ammeter, Wattmeter, Energy Meter, LVDT, and Strain Guage.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Test transformer oil for its effectiveness
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Develop the Logic for the basic arithmetic operations, string operations and code converstions using 8086 microprocessor
5.5	VR17	02	B.Tech-Electrical and Electronics Engineering		Microproce ssors and Microcontr	CO2	Design the Interfacing circuit for the serial communication and timer operations using 8051 Micro controller
55	VR17	02	B.Tech-Electrical and Electronics Engineering	1002173222	ollers (MPMC) Lab	CO3	Develop program to Generate wave forms by interfacing 8255-PPI to 8086 and 8051
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	design a Interface and operate stepper motor and traffic signal lights using 8086 and 8051
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Identify a suitable motor for electric drive and industrial application and understand various heating and welding methods
	VR17	02	B.Tech-Electrical and Electronics Engineering		Utilization	CO2	Understand the basic terminology in illumination and compare different types of lamps
56	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174101	of Electrical Energy	CO3	Analyze the speed -time characteristics of different services
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Calculate the tractive effort and specific energy consumption for the given run and understanding the principles of energy efficient and modern tractive motors
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Demonstrate the PLCs and their I/O devices.
57	VR17	02	B.Tech-Electrical and Electronics Engineering	1000174100	Programma	CO2	Write the Ladder Logic for Various Basic Applications.
37	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174102	ble Logic Controller	CO3	Develop ladder logic for timer and counter functions to PLC
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Construct PLC hardware connections and Develop programming for any industrial control application.
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Understand the operation of various components of power system control.
58	VR17	02	B.Tech-Electrical and Electronics Engineering	1000184400	Power System	CO2	Apply algorithms to solve optimal scheduling of Hydrothermal Systems.
20		02	B.Tech-Electrical	1002174103	Operation & Control		Analyse single area and two area load frequency

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	VD17	02	B.Tech-Electrical				Evaluate performance of reactive power
	VR17	02	and Electronics	4			compensation in transmission systems.
		_	Engineering			CO4	
			B.Tech-Electrical	l i	İ		Understand the different types of Circuit
	VR17	02	and Electronics				Breakers and Relay in Power system
			Engineering			COI	
			B.Tech-Electrical				Design the rating of CB and Relay to protect the
	VR17	02	and Electronics		Contrabanan		Power System against the Faults
59	<u> </u>		Engineering	1002174104	Switchgear	CO2	
39			B.Tech-Electrical	1002174104	and Protection		Differentiate the grounded and ungrounded
	VR17	02	and Electronics		Protection		power system against over voltage Protection
		-	Engineering			CO3	
			B.Tech-Electrical				Apply suitable protection schemes for different
	VR17	02	and Electronics				types of faults occur in transformers, alternators,
			Engineering			CO4	feeders and bus bars
			B.Tech-Electrical				understand the topologies and interconnection
	VR17	02	and Electronics				issues of DGs
			Engineering			COI	153403 01 203
			B.Tech-Electrical				reliaze the features of grid connected DG system
	VR17	02	and Electronics	l f	Distributed		remaze the reatures of grid connected DG system
	'	V=	Engineering		Generation	CO2	
60			B.Tech-Electrical	1002174105	and	CO2	Illustrate the desired
	VR17	02	and Electronics		Microgrids		ilustrate the design power converter topologies
	[\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	02			Microgras	000	for DG applications
	-		Engineering			CO3	
	VR17	03	B.Tech-Electrical				determine the control of MG and understand
	VK17	02	and Electronics				market issues of Microgrid
	-		Engineering		-	CO4	
	10017	00	B.Tech-Electrical				
	VR17	02	and Electronics				Understand the State space representation and
		_	Engineering			CO1	nonlinear systems.
			B.Tech-Electrical				
	VR17	02	and Electronics	1	Advanced		Understand the application of calculus of
61		_	Engineering	1002174106	Control	CO2	variations to optimal control problems
	1		B.Tech-Electrical		Systems		
	VRI7	02	and Electronics		Joystonia		Determine the state feedback gains with &
			Engineering			CO3	without observer
			B.Tech-Electrical				
	VR17	02	and Electronics				
			Engineering		l	CO4	Design optimal Linear Quadratic regulator
	Į I		B.Tech-Electrical				Develop bode plots, root locus and Nyquist plots
	VR17	02	and Electronics				for the transfer functions of systems up to 5th
			Engineering			CO1	order.
			B.Tech-Electrical	1			
	VR17	02	and Electronics		l		
63			Engineering		Electrical	CO2	Converter, full convertor and PWM inverter.
62			B.Tech-Electrical	1002174121	Simulation		Simulate D.C separately excited motor and
	VR17	02	and Electronics		Lab		transmission line by incorporating line, load and
			Engineering			CO3	transformer models.
			B.Tech-Electrical	1		203	The state of the s
	VR17	02	and Electronics				Analyse transient analysis of RLC circuit and
	` ,	02	Engineering			CO4	
_			B.Tech-Electrical			CU4	single machine connected to infinite bus.
	VR17	02	and Electronics				Analysis discontinuous
	''\'	02	1				Analyze the fault current and sequence
	ı l		Engineering	-		CO1	impedance of 3-phase alternator and transforme
			B.Tech-Electrical and Electronics				
	VD:3	0.0	I and blackeonica		Power		Compare the settling time and steady state error
	VR17	02					
	VR17	02	Engineering			CO2	for LFC with and without controller.
63			Engineering B.Tech-Electrical	1002174122	Systems &	CO2	for LFC with and without controller.
63	VR17	02	Engineering	1002174122		CO2	for LFC with and without controller. Perform load flow analysis for a N-bus system

	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Calculate the economical load dispatch for optimum operation of generators & to determine the A,B,C,D parameters for a long ,medium, short transmission line.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Understand the modelling of digital control Systems in frequency domain and time domain.
64	VRI7	02	B.Tech-Electrical and Electronics Engineering	1002174201	Digital Control	CO2	Reliaze the z-transformations and their role in the mathematical analysis of different systems
	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174201	Systems	CO3	Analyse stability of the Linear Discrete systems
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Design the state feedback controller for Linear Discrete systems
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Compare HVDC and AC transmission system w.r.t. economical, technical and reliability aspects.
6	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174202	HVDC Transmissio	CO2	Analyze the six pulse and twelve pulse converter configurations and describe converter control characteristics and reactive power control in HVDC transmission system.
	VR17	02	B.Tech-Electrical and Electronics Engineering		n	CO3	Distinguish various converter faults and protection methods in HVDC transmission system.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Calculate AC harmonics and design suitable filters to eliminate them.
	VR17	02	B.Tech-Electrical and Electronics Engineering			<u>CO</u> 1	Understand the Design of substations and distribution systems and Identifying the different factors of distribution systems
66	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174203	Electrical Distribution	CO2	Calculate voltage drops and power loss manually at each and every point in a line.
	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174203	Systems	CO3	Ilustrate the distribution system protection and its coordination schemes
(VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Analyse the effect of compensation on p.f improvement and voltage control on distribution system
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Explain the concept of Resilient and Self-Healing Grid.
67	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174204	Smart Grid	CO2	Discuss Plug-in Hybrid Electric Vehicles (PHEVs) and the concept of Vehicle-to-Grid.
	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174204	Technologi es	CO3	Describe Smart Substations, GIS, Smart Storage, WAMS and PMU.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	DiscussMicro Grids (MGs) and Distributed Energy Resources (DERs) and alsoPQ issues with RES and also ICT for Smart Grid.
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Explain power flow control in transmission lines using FACTS controllers
	VR17	02	B.Tech-Electrical and Electronics Engineering		Flexible Alternating	CO2	Compare voltage sourced converter (VSC) and current sourced converter (CSC)

68	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174205	Current Transmissio n Systems	CO3	Analyze Shunt compensation methods to improve transient stability and reduce power oscillations in the transmission lines.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Discuss operation and control of SVC and STATCOM and describe series compensators and combined compensators used in enhancing the performance of transmission lines.
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Explain the importance of power system deregulation and restructuring.
	VR17	02	B.Tech-Electrical and Electronics Engineering		Power	CO2	Compute ATC.
69	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174206	System Reforms	CO3	Describe transmission congestion management.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Compute electricity pricing and explain power system operation in deregulated environment and also discuss the importance of ancillary services.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Estimate the condition of various electrical installation based on Insulationstatus.
70	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174207	Condition Monitoring	CO2	Implement condition monitoring plan for complete ElectricalSystem
	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174207	of Electrical Equipments	CO3	Identify amount of damage/deterioration in the Equipment
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Check the mechanical stability of the electrical equipment
	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	Apply knowledge of Electrical and Electronics engineering fundamentals to solve the complex Engineering problems
71	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174231	Main Project	CO2	Design prototypes & solutions to solve the specific needs related with public health, safety, society, cultural and environment leading to sustainable development following ethical values
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO3	Apply appropriate techniques, resources and modern engineering tools during the implementation of project
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Execute a multidisciplinary project leading to the ability of engagement in lifelong learning and self development
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO1	Relate literature to formulate problem statements of technology and innovaations in EEE
72	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174251	Technical	CO2	Develop documentation, presentation and communication skills for prefession and personal growth following ethical values
	VR17	02	B.Tech-Electrical and Electronics Engineering	10021/4231	Seminar	CO3	Identify new directions in Multidisciplinary area
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Assess engineering solution and its applications for Real time problem

	VR17	02	B.Tech-Electrical and Electronics Engineering			COI	demonstrate the application of the knowledge acquired in the Electrical and Electronics domain to solve the problems of the various forms of organisations/instituions
73	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174261	Comprehen sive Viva	CO2	Understand the practical difficulties in applying the various forms of solutions to find the feasible solution.
	VR17	02	B.Tech-Electrical and Electronics Engineering		Sive viva	CO3	Solve the real life problems and assess the implications of various forms of solutions.
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Exhibit professional etiquette suitable for career progression and Present their views cogently and precisely
	VR17	02	B.Tech-Electrical and Electronics Engineering			, CO1	Demonstrate the application of knowledge and skill sets acquired from the course and workplace in the assigned job functions
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO2	Exhibit critical thinking and problem solving skills by analysing underlying issue/s to challenges
74	VR17	02	B.Tech-Electrical and Electronics Engineering	1002174281	Internship	CO3	Solve real life challenges in the workplace by analysing work environment and conditions, and selecting appropriate skill sets acquired from the course
	VR17	02	B.Tech-Electrical and Electronics Engineering			CO4	Articulate career options by considering opportunities in company, sector, industry, professional and educational advancement;



PRINCIPAL
VIGNAN'S INSTITUTE OF
Information Technology (A)
Inde: VSEZ, Durvide Visakhapatnam-49

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VRI7 OI B.Tech-Civil Engineering VRI7 OI	SN	Regulo	Program	Programme			OUTCO							
VR17 01 B.Tech-Civil Engineering Engineering VR17 01 B.Tech-Civil Engineering Engineering VR17 01 B.Tech-Civil Engineering Engineering VR17 01 B.Tech-Civil Engineering Engi		_		_	Course Code		CO							
VR17 O1 B.Tech-Civil Engineering VR17 O1 B.Te		VD17	01	B.Tech-Civil			601							
VR17		VICI7	01			i .								
VR17 O1 B.Tech-Civil Engineering VR17 O1		VR17	01					Articulate the technological advancements fluently						
VR17	1				1000171101	ENGLISH-1	CO2							
VR17 01 B.Tech-Civil Engineering VR17		VR17	01				CO3							
VR17						1								
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VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering		3/D17	01											
VR17 OI Engineering UR17 OI Engineering UR17 OI Engineering VR17 OI Engineering UR18 UR1		VK17	UI	Engineering			COI	Solve the first and higher order linear differential equations.						
VR17 OI B.Tech-Civil Engineering VR17 OI B.Te		VR17	01											
VR17 OI Engineering CO3 integral.	2		Ů.		1000171102		CO2							
VR17	,	VR17	01			TICS-1	CO3							
VR17 O1 Engineering CO4 Using Laplace Transform technique.							.							
VR17 O1		VR17	01				CO4							
VR17	-													
VR17		VR17	01				COI							
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VR17	3	VKI7	O1		1000171104	1 1	CO2							
VR17 01 B.Tech-Civil Engineering VR18 01 B.Tech-Civil Engineering VR18 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering	'	VR17	01			1 1	CO3							
VR17 01 Engineering VR17 01 B.Tech-Civil Engineering Analyze the force systems for equilibrium conditions and able to draw free body diagram. ENGINEERI NG MECHANIC S CO3 Elect the best loop construct for a given problem CO4 Esuscidate the natural resource & their importance for the sustenance of life and recognises the need to conserve natural resource Gives the broad view on the various attributes of pollution & and their impact & measure to reduce he pollution & and their impact Assessment, Environment of Impact Assessment, Environment of Impact Assessment, Environment of Impact Assessment, Environment of Impact Assessment, Environment of Impact Assessment, Environment of Impact Assessment, Environment of Impact Assessment, Environment of Impact A						Y		1						
VR17 01 B.Tech-Civil Engineering VR18 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering		VR17	01				CO4							
VR17 01 Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tec														
VR17 01 B.Tech-Civil Engineering VR18 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering		VR17	01				CO1	Write compile and debug Programs in C language						
VR17 01 B.Tech-Civil Engineering VR18 01 B.Tech-Civil Engineering		VD17	01		1	PROGRAM MING								
VR17 O1	4	VIC17	O1		1000171105		CO2	Ose operators, data types and write programs						
VR17 O1 B.Tech-Civil Engineering ON Environmental Impact Assessment, Engineering VR17 O1 B.Tech-Civil Engineering VR1		VR17	01				CO3	Select the best loop construct for a given problem						
VR17 01 Engineering VR17 01 B.Tech-Civil Engineering VR18 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civi			,			OSING C		The state of the s						
VR17 01 B.Tech-Civil Engineering VR18 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 0		VR17	01				CO4	Design and implement C programs						
VR17 01 B.Tech-Civil Engineering VR18 01 B.Tech-Civil Engineering VR18 01 B.Tech-Civil Engineering VR18 01 B.Tech-Civil Engineering							C04	Flucidate the natural resource & their importance for the						
VR17 01 B.Tech-Civil Engineering VR18 01 B.Tech-Civil Engineering VR19 01 B.Tech-Civil Engineering VR19 0	-(VR17	01				COI							
VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering	-			Engineering										
Semantification of the large in the large				B Tech-Civil										
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VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering		VD17	0.1	B.Tech-Civil		STODIES	CO2							
VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering		*1017	"	Engineering			COS							
VR17 01 Engineering VR17 01 B.Tech-Civil Engineering				B.Tech-Civil	1									
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VR17 01 Engineering B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering B.Tech-Civil Engineering B.Tech-Civil Engineering B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering CO2 Evaluate the frictional forces between contact surfaces. Able to differentiate between centroid and centre of gravity and determine Centroid, centre of gravity and second moment of area for composite sections.		VIC17	01				COI	able to draw free body diagram.						
VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering VR17 01 B.Tech-Civil Engineering		VR17	01			ENGINEERI		Evaluate the frictional forces between contact surfaces						
VR17 01 B.Tech-Civil Engineering	_			Engineering	1000171116	1	CO2							
WR17 Ot B.Tech-Civil	0	VR17	01		1 10001711161	MECHANIC	CO3							
VR17 01 B.Tech-Civil		''''	, ,	Engineering		S								
		VD15	0.1	B.Tech-Civil	1									
		VKI	01	1			CO4	Analyse the motion and calculate trajectory characteristics.						

			B.Tech-Civil			_	IAI di C.I. di c.i. di
	VR17	01	Engineering		1	COI	Apply the usage of phonemes while referring to the dictionary
	VR17	01	B.Tech-Civil Engineering		ENGLISH COMMUNIC	CO2	Articulate with others by using proper functions.
7	VR17	01	B.Tech-Civil Engineering	1000171121	ATION - SKILLS LAB	CO3	Enact the roles with proper body language.
	VR17	01	B.Tech-Civil Engineering		ı	CO4	Communicate fluently with proper pronunciation
	VR17	01	B.Tech-Civil Engineering			CO1	Categorize various types of polymeric materials, fuels,
	VR17	01	B.Tech-Civil Engineering	Ì	ENGINEERI	CO2	lubricants, refractories and establish their applications. analyze hardness of water and describe various softening
8	VR17	01	B.Tech-Civil Engineering	1000171127	NG CHEMISTR Y LAB	CO3	methods Illustrate the principles of green chemistry, corrosion and its prevention and demonstrate the construction and working of batteries
	VR17	01	B.Tech-Civil Engineering			CO4	Emphasize on various engineering materials like nanomaterials, solar cells and their applications.
	VR17	10	B.Tech-Civil Engineering			COI	Understand C programming development environment, compiling, debugging, and linking and executing a program using the development environment
9	VR17	01	B.Tech-Civil Engineering	1000171128	COMPUTER PROGRAM	CO2	Analyzing the complexity of problems, Modularize the problems into small modules and then convert them into programs
	VR17	01	B.Tech-Civil Engineering		MING LAB	CO3	Understand and apply the in-built functions and customized functions for solving the problems.
	VR17	01	B.Tech-Civil Engineering	ļ		CO4	Understand and apply the pointers, memory allocation techniques and use of files for dealing with variety of problems.
	VR17	01	B.Tech-Civil Engineering			COI	Develop communication skills by inferring the technological advancements.
10	VR17	01	B.Tech-Civil Engineering		l	CO2	Identify the life of eminent personalities.
10	VR17	01	B.Tech-Civil Engineering	1000171201	ENGLISH-II	CO3	Relate the importance of Environment and its sustainability to language learning
	VR17	01	B.Tech-Civil Engineering			CO4	Create the art of writing by applying apt vocabulary and grammar.
	VR17	01	B.Tech-Civil Engineering			COI	Estimate numerical solution of non Linear equation.
	VR17	01	B.Tech-Civil Engineering		ENGINEERI NG	CO2	Construct Interpolating polynomial for the given data.
11	VR17	01	B.Tech-Civil Engineering	1000171202	MATHEMA TIC-II	CO3	Calculate Numerical Solution of ODE and Numerical Integration.
	VR17	10	B.Tech-Civil Engineering			CO4	Evaluate Fourier series and Fourier transforms for functions
	VR17	01	B.Tech-Civil Engineering			CO1	Solve simultaneous linear equations numerically using rank of a matrix and also Eigen values and Eigen vectors of a square matrix.
12	VR17	01	B.Tech-Civil Engineering	1000171203	ENGINEERI NG	CO2	Identify and solve partial differential equations.
	VR17	01	B.Tech-Civil Engineering		MATHEMA TIC-III	CO3	Calculate gradient of a scalar function, divergence and curl of a vector function.
	VR17	01	B.Tech-Civil Engineering			CO4	Evaluate line, surface and volume integrals using appropriate integral theorems.
	VR17	01	B.Tech-Civil Engineering			COI	Describe the wave phenomena and working principle of optical instruments.
13	VR17	01	B.Tech-Civil Engineering	1000171204	ENGINEERI NG	CO2	Apply the basic knowledge of acoustics and ultrasonics for the understanding of acoustics design and non-destructive testing.

	VR17	01	B.Tech-Civil Engineering		PHYSICS	CO3	Understanding the fundmental concepts of nuclear reactions for working of nuclear reactors.
	VR17	01	B.Tech-Civil Engineering			CO4	Discuss the structural, magnetic and electrical properties of materials.
	VR17	01	B.Tech-Civil Engineering		BASIC	CO1	Able to analyse the various electrical networks.
14	VR17	01	B.Tech-Civil Engineering	1000171205	ELECTRICA L AND ELECTRONI	CO2	Able to understand the operation of DC generators,3-point starter and conduct the Swinburne's Test.
14	VR17	01	B.Tech-Civil Engineering	1000171203	CS ENGINEERI	CO3	Able to analyse the performance of transformer.
	VR17	01	B.Tech-Civil Engineering		NG	CO4	Able to explain the operation of 3-phase alternator and 3-phase induction motors.
	VR17	01	B.Tech-Civil Engineering			COI	Understand the use of drawing instruments to construct the polygons and curves
15	VR17	01	B.Tech-Civil Engineering	1000171206	ENGINEERI NG	CO2	Learn the principle of orthographic projections. Draw Orthographic projections of points, lines.
	VR17	01	B.Tech-Civil Engineering		DRAWING	CO3	Draw the various types of planes and solids its views in different Positions
-	VR17	01	B.Tech-Civil Engineering			CO4	Draw isometric views of simple objects
	VR17	01	B.Tech-Civil Engineering		ENGLISH -	CO1	Apply the usage of phonemes while referring to the dictionary
16	VR17	01	B.Tech-Civil Engineering	1000171221	COMMUNIC ATION	CO2	Articulate with others by using proper functions.
	VR17	01	B.Tech-Civil Engineering		SKILLS LAB	CO3	Enact the roles with proper body language.
	VR17	01	B.Tech-Civil Engineering B.Tech-Civil			CO4	Communicate fluently with proper pronunciation
	VR17	01	Engineering			COI	Experimentation of laws of vibrations in strenteched string
	VR17	01	B.Tech-Civil Engineering		ENGINEERI NG	CO2	Determination of velocity of sound, rigidity modulus of a wire, acceleration due to gravity, radius of gyration and Planck's constant.
17	VR17	01	B.Tech-Civil Engineering	1000171222	PHYSICS LAB	CO3	Analyze the voltage vs. current characteristics of Zener diode and temperature vs. resistance characteristics of a thermistor
	VR17	01	B.Tech-Civil Engineering			CO4	Demonstration of formation Newton's rings, diffraction pattern using grating and induced magnetic field in a cirucuclar coil.
	VR17	01	B.Tech-Civil Engineering			COI	Study and practice on machine tools and their operations
18	VR17	01	B.Tech-Civil Engineering	1000171224	ENGINEERI NG	CO2	Practice on manufacturing of components using workshop trades including pluming, fitting, carpentry, foundry, house wiring and welding
	VR17	01	B.Tech-Civil Engineering	1000171224	WORKSHOP	CO3	Identify and apply suitable tools for different trades of Engineering processes including drilling, material removing measuring, chiseling
	VR17	01	B.Tech-Civil Engineering			CO4	Apply basic engineering knowledge for carpentry practice
	VR17	01	B.Tech-Civil Engineering			CO1	Utilize the permutations and combinations in probability to classify random variables
19	VR17	10	B.Tech-Civil Engineering	1001172101	PROBABILI TY AND	CO2	Determine the cumulative distribution function, mean and variance of discrete and continuous random variables.
	VR17	01	B.Tech-Civil Engineering		STATISTICS	CO3	Evaluate probabilities using normal distribution and describe sampling distribution of means
	VR17	01	B.Tech-Civil Engineering			CO4	Forecast the correlation and regression coefficient for the b variate data

			B.Tech-Civil				Identify the continue of the transmitter
	VR17	01	Engineering			COI	Identify the various types of materials and Understand the quality control tests on construction materials
ŀ			B.Tech-Civil		<u> </u>		
20	VR17	01	Engineering	1001173103	CONCRETE	CO2	Assimilate the behaviour of fresh concrete
20	VR17	01	B.Tech-Civil	1001172102	TECHNOLO - GY	CO2	
	VKI7	O1	Engineering		" [CO3	Determine the durability properties of hardened concrete
	VR17	01	B.Tech-Civil	1			Design various grades of concrete mixes as per IS Code
			Engineering			CO4	· · · · · · · · · · · · · · · · · · ·
	VR17	01	B.Tech-Civil	÷1272-22		COI	To understand the basics of material properties, stress and
			Engineering B.Tech-Civil				strain.
	VR17	01	Engineering		STRENGTH OF	CO2	Compute the shear force and bending moment of beams
21			B.Tech-Civil	1001172103	MATERIALS		Determine the flexural stresses, shear stresses and
	VR17	01	Engineering		- I	CO3	deflection in beams
l	VD 17	01	B.Tech-Civil		l Ì		
- 1	VR17	01	Engineering			CO4	classify and evaluate the stress of thin and thick cylinders.
	VR17	01	B.Tech-Civil			COI	Predict the properties of building stones, bricks, tiles and its
]	VICI		Engineering			COI	classifications.
1	VR17	01	B.Tech-Civil		BUILDING		Describe the types of masonry and the properties, types,
4			Engineering		MATERIALS	_CO2	defects and alternatives of wood
~	VR17	01	B.Tech-Civil	1001172104	AND CONSTRUC	CO3	Identify building components include lintels, staircases,
			Engineering		TION		floors, roofs and trusses
	VR17	01	B.Tech-Civil				Distinguish the finishings include proofing, plastering, pointing, washing, paints and describe formwork and
	' ' '	01	Engineering			CO4	scaffolding
			B.Tech-Civil				Interpret various instruments to evalute the required fields
	VR17	01	Engineering			COI	of surveying
	VR17	01	B.Tech-Civil	1			Examine the local attaractions with tactical methods in
23	VKI7	10	Engineering	1001172105	SURVEYIN	CO2	compass surveying
	VR17	01	B.Tech-Civil	1001172103	G-I	CO3	Solve three point problem, two point problem using plane
			Engineering				table survey through with graphical method
	VRI7	01	B.Tech-Civil	6	١ ١		Describe levelling survey to find elevations followed by
			Engineering		 	CO4	contour mapping
	VR17	01	B.Tech-Civil			CO1	Describe the physical properties of fluids & their influences on fluid motion and Compute hydro static forces on various
		01	Engineering			COI	sub merged Surfaces.
			B.Tech-Civil	1	FLUID	H. 60	Compare the concepts of kinematics and dynamics of fluid
24	VRI7	01	Engineering	1001172106	1 1	CO2	flow.
	VR17	10	B.Tech-Civil	1	s		Analyze the boundary layer of fluid in laminar and turbulent
	VKI7	O1	Engineering			CO3	flows.
	VR17	01	B.Tech-Civil				Calibrate flow in pitot tube, venturi meter, orifice meter,
_			Engineering			CO4	orifices, notches and weirs
· '	VR17	01	B.Tech-Civil			CO1	Measure the distance across obstacles and area of traversing
	<u> </u>		Engineering B.Tech-Civil	-	OLIDA PERMA		using chain or tape or compass.
	VR17	01	Engineering		SURVEYIN G FIELD	CO2	Interpret the area of traverse with the help of plane table
25			B.Tech-Civil	1001172121	WORK - I	C02	survey Predict the elevations along longitudinal or cross sections at
	VR17	01	Engineering		LAB	CO3	various locations
			B.Tech-Civil	1			Examine the tools for measurement of latitudes, longitudes
	VR17	01	Engineering			CO4	and elevations
	VR17	Λ1	B.Tech-Civil				
	VKI/	01	Engineering			COI	Examine the physical properties of cement
	VR17	01	B.Tech-Civil		CONCRETE		Differentiate aggregates based on size and find out strength
26	, KI,	- 01	Engineering	1001172122	TECHNOLO	CO2	properties of aggregates
75	VR17	01	B.Tech-Civil	1001112122	GY LAB	CO3	Determine the workability of fresh concrete by various
			Engineering				methods.
	VR17	01	B.Tech-Civil				Inspect the failure patterns on hardened concrete under
	I		Engineering		1	CO4	compression test and split tensile test.

	VR17	01	B.Tech-Civil			COI	Relate Ethical Human Values
			Engineering		PROFESSIO		Notice Street Little 7 and 5
27	VR17	01	B.Tech-Civil Engineering		NAL ETHICS	CO2	Apply Engineering knowledge for societal benefits
27	VR17	01	B.Tech-Civil Engineering	1099172103	AND HUMAN	CO3	Demonstrate responsibility for Safety, Risk & rights
			B.Tech-Civil	1	VALUES	<u> </u>	
	VR17	01	Engineering		VALUES	CO4	Outline the various Current Global Issues
			B.Tech-Civil				
	VR17	01	Engineering	*	1	COI	Utilize the building byelaws and regulations for construction
			B.Tech-Civil		BUILDING		Describe the orientation, standards, requirements, types and
28	VR17	01	Engineering	1001172201	PLANNING	CO2	planning of various residential and public buildings
46	VR17	01	B.Tech-Civil	1001172201	AND	CO3	Draw the sign conventions of various types of building
	VICIT	01	Engineering		DRAWING		materials and bonds
1	VR17	01	B.Tech-Civil		1		Produce plans and sectional elevations of various residential
			Engineering			CO4	and public buildings
	VR17	01	B.Tech-Civil			COI	Illustrate principal stresses, maximum shearing stress, and
	71017		Engineering]		COI	the stresses acting on a structural member
			B.Tech-Civil		CTDENCTU		Determine the deflections and rotations produced by
400	VR17	01	1		STRENGTH		Torsional loading of shafts apply the theories of failure
2	2		Engineering	1001172202	OF MATERIALS	CO2	
	VR17	01	B.Tech-Civil]	- II	CO3	Evaluate direct and bending stresses in columns and
	VK17	U1	Engineering		-11	CO3	compute deflections in springs
	VR17	Δ1	B.Tech-Civil	1	[Analyze columns and struts subjected to axial loading under
	VKI/	10	Engineering		1 [CO4	various end conditions
	1/0.7	0.1	B.Tech-Civil				Illustrate various functions of production and inventory
	VR17	01	Engineering			COI	management
		0.4	B.Tech-Civil	1	ļ		Determine the various concepts of strategic management
20	VR17	01	Engineering		MANAGEM	CO2	and project management
30	177.5		B.Tech-Civil	1099172203	ENT		Analyze the process of matching manager qualifications
	VR17	01	Engineering		SCIENCE	CO3	with position requirements and concept of marketing mix
			B.Tech-Civil				
	VRI7	01	Engineering	50		CO4	Compare the various contemporary issues of management
	VR17	0.1	B.Tech-Civil				Analyzing the behaviour of uniform and non uniform flow
	VKI/	01	Engineering		HYDRAULI	CO1	in a open channel.
	370.17	0.1	B.Tech-Civil	1	CS AND		Creating a model for a prototype by using the concept of
31	VR17	01	Engineering	1001170004	HYDRAULI	CO2	simulation.
31	1/2/2		B.Tech-Civil	1001172204	CS		Applying the concept of generating hydroelectricity using
6	VR17	01	Engineering		MACHINER	CO3	hydraulic turbines.
	1	0.4	B.Tech-Civil	1	Y		Estimate the head and discharge through Centrifugal-Pumps
	VR17	01	Engineering		1	CO4	and Reciprocating-Pumps in detail
		0.1	B.Tech-Civil	7 -			Measure the distances and elevations using Theodilte and
	VR17	01	Engineering			COI	Tacheomatric surveying
			B.Tech-Civil	1	3		Organise simple and compound curves using various
	VR17	01	Engineering	l	SURVEYIN	CO2	methods of theodilite surveying
32			B.Tech-Civil	1001172205	G-II		Compute the areas and volumes of embankments, cuttings,
	VR17	01	Engineering		"	CO3	reservoir etc. by various methods
			B.Tech-Civil	1			Examine the various measurements in acessing the areial
	VR17	01	Engineering			CO4	survey
	-		B.Tech-Civil				Distinguish between stable and unstable and statically
_		01	Engineering			COI	determinate and indeterminate structures
	VR17	V .	Lingtinecting	-			
	VR17						Analyze the S.F, B.M and deflection of propped, fixed and
	VR17 VR17	01	B.Tech-Civil		STRUCTUR	((0.00)	Joontinuous hanna
22	\vdash		B.Tech-Civil Engineering	100117222	STRUCTUR AL	CO2	continuous beams
33	\vdash		B.Tech-Civil Engineering B.Tech-Civil	1001172206		CO2	Calculate the deflections of truss structures and beams by
33	VR17	01	B.Tech-Civil Engineering	1001172206	AL		Calculate the deflections of truss structures and beams by using strain energy method.
33	VR17	01	B.Tech-Civil Engineering B.Tech-Civil	1001172206	AL ANALYSIS -		Calculate the deflections of truss structures and beams by using strain energy method. Evaluate and draw the influence lines for reactions, shears,
33	VR17	01	B.Tech-Civil Engineering B.Tech-Civil Engineering	1001172206	AL ANALYSIS -		Calculate the deflections of truss structures and beams by using strain energy method.

	VR17	01	B.Tech-Civil Engineering			COI	Understand the basic concepts of highway planning and alignment
34	VR17	01	B.Tech-Civil Engineering	1001172207	TRANSPOR TATION	CO2	Design of geometric elements of highway to resolve the transportation network issues
34	VR17	01	B.Tech-Civil Engineering	1001172207	ENGINEERI NG - I	CO3	Analyse the traffic flow parameters inline with the demand
	VR17	01	B.Tech-Civil Engineering			CO4	Evaluate the pavement material properties and design suitable pavement
	VR17	01	B.Tech-Civil Engineering		FLUID MECHANIC	COI	Determine Coefficient of discharge Venturimeter, Orifice meter, rectangular Notch and /or Triangular Notch, a small orifice, an external mouth piece
35	VR17	01	B.Tech-Civil Engineering	1001172221	S AND HYDRAULI	CO2	Evaluate the bernoulli's equation, impact of jet on vanes and hydraulic jump
	VR17	01	B.Tech-Civil Engineering		CS MACHINER	CO3	Illustrate the performance of Pelton wheel turbine and Francis turbine
	VR17	10	B.Tech-Civil Engineering		Y LAB	CO4	Determine the efficiency centrifugal and reciprocating pump
	VR17	01	B.Tech-Civil Engineering			COI	Interpret the tensile force on steel bar
36	VR17	01	B.Tech-Civil Engineering	1001172222	STRENGTH OF	CO2	Evaluate the bending stress on cantilever and simply supported beam
30-	VR17	01	B.Tech-Civil Engineering	1001172222	MATGERIA LS LAB	CO3	Determine the Torsion, deflection in spring, compression force on wood or concrete
	VR17	01	B.Tech-Civil Engineering			CO4	Deduct the deflection test on beams include cantilever, simply supported and continuous beam
	VR17	01	B.Tech-Civil Engineering			CO1	Analyze a complex engineering problem and to apply principles of civil engineering and relevant disciplines to idenitfy solutions
37	VRI7	01	B.Tech-Civil Engineering	1001172231	INDUSTRIA L VISIT	CO2	Design, implement, and evaluate a solution to meet the requirements in the context of the civil engineering program's discipline
	VR17	01	B.Tech-Civil Engineering		L VISIT	CO3	Apply civil engineering fundamentals to produce proper solutions to real world problems.
	VR17	01	B.Tech-Civil Engineering			CO4	Recognize professional responsibilities and make informed judgments in civil practice based on legal and ethical principles.
	VR17	01	B.Tech-Civil Engineering			COI	Describe the economic activities performed by the businessmen in the business for profit earning. Understand the significance of demand, its analysis, measurement of demand and its Forecasting
	VR17	01	B.Tech-Civil Engineering		MANAGERI AL	CO2	Evaluate the production theories and pricing policies of various enterprises
38	VR17	01	B.Tech-Civil Engineering	1099172106	ECONOMIC S AND FINANCIAL ANALYSIS	CO3	Design and implement different structures of market covering how price is determined under different market structures. Also can able to take decisions using business cycles. Analyze different forms of business organizations existing in the modern business and able to choose suitable form of business
	VR17	01	B.Tech-Civil Engineering			CO4	Evaluate investment proposals using capital budgeting tools and techniques.
	VR17	01	B.Tech-Civil Engineering			CO1	Understand the failure of some civil engineering constructions due to geological drawbacks through some case histories
	VR17	01	B.Tech-Civil Engineering		ENGINEERI	CO2	Differentiate various rock forming minerals and economic minerals based on their physical properties and distinguish igneous, sedimentary and metamorphic rocks based on megascopic properties

39	VR17	01	B.Tech-Civil Engineering	1001173101	NG GEOLOGY	CO3	Describe the common geological structures associate within different rock strata and classify folds, faults, unconformities and joints based on different criterias
	VR17	01	B.Tech-Civil Engineering			CO4	Investigate subsurface irregularities at construction/foundation site and ground water occurence with the help of various Geophysical methods such as Electrical resistivity method, Seismic refraction method, gravity mehtod etc.
	VR17	01	B.Tech-Civil Engineering			CO1	Analyze the two hinged and three hinged arches for different support levels
	VR17	01	B.Tech-Civil Engineering		STRUCTUR	CO2	Evaluate and draw the BMD of frames by using lateral load analysis.
40	VR17	01	B.Tech-Civil Engineering	1001173102	ANALYSIS -	CO3	Calculate the internal forces in cable.
	VR17	01	B.Tech-Civil Engineering			CO4	Apply the moment distribution method, kanis method, matrix method to analyze statically indeterminate structures
	VR17	01	B.Tech-Civil Engineering		DESIGN OF	COI	Interpret the concepts of working stress method and the limit state method and how they relate to the design of structures.
41	VR17	01	B.Tech-Civil Engineering	1001173103	REINFORCE D	CO2	Outline the behaviour of RCC structural members for safe design.
41	VR17	01	B.Tech-Civil Engineering	1001173103	CONCRETE STRUCTUR	CO3	Identify reinforced concrete beam failure modes under shear, torsion and bond and design reinforcement details.
(0	VR17	01	B.Tech-Civil Engineering		ES	CO4	Design basic structural elements (beams, slabs, columns and footings) according to the design code of IS 456: 2000
	VR17	01	B.Tech-Civil Engineering			CO1	Interpret the alignment of railway track and sustainable airport site location
42	VR17	01	B.Tech-Civil Engineering	1001173104	TRANSPOR TATION	CO2	Evaluate the turnout parameters and the intent of various signals
44	VR17	01	B.Tech-Civil Engineering	1001173104	ENGINEERI NG - II	CO3	Design the airport geometrics and airfield pavements
	VR17	01	B.Tech-Civil Engineering			CO4	Examine and plan the construction of the docks and harbours with maintenance
	VR17	01	B.Tech-Civil Engineering			COI	Compute the horizontal and vertical angles
4	VR17	01	B.Tech-Civil Engineering	1001173121	SURVEYIN G FIELD	CO2	Estimate the heights and distances by method of trigonometric leveling and tachometry
7.	VR17	01	B.Tech-Civil Engineering	1001175121	WORK - II LAB	CO3	Design and set the simple curve
	VR17	01	B.Tech-Civil Engineering	Posterio		CO4	Evaluate the areas, heights, distances and setting out the structures
	VR17	01	B.Tech-Civil Engineering			COI	Identify and differentiate various minerals through their physical properties
1 4 4	VR17	01	B.Tech-Civil Engineering	1001173133	ENGINEERI NG	CO2	Identify and differentiate the igneous, sedimentary and metamorphic rocks through megascopic study
44	VR17	01	B.Tech-Civil Engineering	1001173122	GEOLOGY LAB	CO3	Interpret the geological maps and evaluate the orientation of rock strata by drawing cross section of the ground
	VR17	01	B.Tech-Civil Engineering			CO4	Solve the structural geological problem at foundation sites
	VR17	01	B.Tech-Civil Engineering			COI	Test the aggregates and their suitability for the road construction
	VR17	01	B.Tech-Civil Engineering	1001150150	TRANSPOR ATATION	CO2	Examine the bitumen and their suitability towrads flexible pavement construction
45	VR17	01	B.Tech-Civil Engineering	1001173123	ENGINEERI NG LAB		Analyze the traffic flow and parking characteristics

	VR17	01	B.Tech-Civil Engineering			CO4	Analyze the capacity and saturation flow of the traffic
1	VRI7	01	B.Tech-Civil			CO1	Identify the different failure modes of bolted and welded
-	VR17	01	Engineering B.Tech-Civil		DESIGN OF	CO2	connections, and determine their design strengths. Analyse and design tension members, compression members, and beams.
46 -	VR17	01	Engineering B.Tech-Civil	1001173201	STEEL STRUCTRU	CO2	Differentiate various types of roof trusses and create the
ŀ			Engineering B.Tech-Civil	1	ES		solution for purlins to withstand the wind loads. Design complicated structures like plate girder, gantry
_	VR17	01	Engineering B.Tech-Civil			CO4_	girder Classify the different types of soil and recognize the various
	VR17	01	Engineering			COI	index properties of the soils.
1	VR17	01	B.Tech-Civil Engineering		GEOTECHN	CO2	Analyze the effect of seepage in soil and stability pertaining to slopes
47 [VR17	01	B.Tech-Civil Engineering	1001173202	ICAL ENGINEERI	CO3	Evaluate the settlements and increase in the vertical stress due to super structure loads at significant depth in the soil.
	VR17	01	B.Tech-Civil Engineering		NG - I	CO4	Familiarize the compaction characteristics, consolidation parameters and to showcase its behavior during various engineering applications such as roads,dams,embankments,etc.
	VR17	01	B.Tech-Civil Engineering			COI	Analyze problems associated with water supply engineering
	VR17	01	B.Tech-Civil Engineering	1001172202	ENVIRONM ENTAL	CO2	Design water conveyance, treatment, storage and distribution systems
48	VR17	01	B.Tech-Civil Engineering	1001173203	ENGINEERI NG - I	CO3	Solve water supply engineering problems through proper investigations and interpretation
	VR17	01	B.Tech-Civil Engineering			CO4	Maintain quality standards in analysis, treatment and distribution of water in water supply schemes.
	VR17	01	B.Tech-Civil Engineering			CO1	Sketch the hydrologic cycle and discuss its impact on Environment.
40	VR17	01	B.Tech-Civil Engineering	1001172204	WATER RESOURCE	CO2	Estimate various abstractions from Precipitation like Evaporation, Evapotranspiration and Infiltration.
49	VR17	01	B.Tech-Civil Engineering	1001173204	S ENGINEERI	CO3	Develop Hydrographs of a Catchment by evaluation the rainfall trends.
	VR17	01	B.Tech-Civil Engineering		NG - I	CO4	Analyze frequency of Floods to estimate design flood, floor routing and groundwater movement.
	VR17	01	B.Tech-Civil Engineering			COI	Analyse the geodesy and global positioning systems
	VR17	01	B.Tech-Civil Engineering	1	ADVANCED SURVEYIN	CO2	Describe the GPS Signal Structure and GPS Orbits
50	VR17	01	B.Tech-Civil Engineering	1001173205	G USING GPS	CO3	Identify the GPS errors and evaluate to accurate results
	VR17	01	B.Tech-Civil Engineering			CO4	Apply the concepts of various GPS survey in practical applications
	VR17	01	B.Tech-Civil Engineering		GROUNDW	CO1	Estimate aquifer parameters and yield of wells
	VR17	01	B.Tech-Civil		ATER DEVELOPM	602	Analyze radial flow towards wells in confined and
51	VR17	01	B.Tech-Civil	1001173206	ENT AND MANAGEM	CO2	unconfined aquifers. Interpret geophysical exploration data for scientific source finding of aquifers.
	VR17	01	B.Tech-Civil	-	ENT	CO4	Apply appropriate measures for groundwater managemen
	VR17	01	B.Tech-Civil			CO1	Distinguish between the quality of domestic and industria
	VR17	01	Engineering B.Tech-Civil	1	WASTE		water requirements and wastewater quantity generation. Impart knowledge on selection of treatment methods for
52	VR17	01	Engineering B.Tech-Civil Engineering	1001173207	WATER MANAGEM ENT	CO2	industrial wastewater. Describe the common methods of treatment in different industries

	VR17	01	B.Tech-Civil Engineering			CO4	Design of wastewater treatment plant for the given sewage characteristics
	VR17	01	B.Tech-Civil Engineering			COI	Use of new materials in Concretes and understand how they affect the properties of concrete
53	VR17	01	B.Tech-Civil Engineering	1001173208	ADVANCED CONCRETE	CO2	Describe the merits and demerits and manufacturing procedures of various special concretes used for special purposes
<i>JJ</i>	VR17	01	B.Tech-Civil Engineering	1001173206	TECHOLOG Y	CO3	Appreciate RMC MIX design for special concrete
	VR17	01	B.Tech-Civil Engineering			CO4	Appreciate need for NDT evaluation of concrete and have knowledge on the working principle of some of the methods
	VR17	01	B.Tech-Civil Engineering		,	COI	Describe the traffic volume of vehicles
54	VR17	01	B.Tech-Civil Engineering	1001173209	TRAFFIC ENGINEERI	CO2	Design On-street or Off- street parking facility for a study area
34	VR17	01	B.Tech-Civil Engineering	1001173209	NG	CO3	Evalaute the Level of Service of a pavement
	VR17	01	B.Tech-Civil Engineering			CO4	Design rotary intersection of a pavement, Design travel demand models
	VR17	01	B.Tech-Civil Engineering			COI	Select the instrument to be used based on the requirements.
0.000	VR17	01	B.Tech-Civil Engineering		ELECTRONI	CO2	Understand and analyse different signal generators and analysers
55	VR17	01	B.Tech-Civil Engineering	1004173209	INSTRUME NTATION	CO3	Understand the design of oscilloscopes for different applications
	VR17	01	B.Tech-Civil Engineering	9		CO4	Design different transducers for measurement of different parameters
-	VR17	01	B.Tech-Civil Engineering		INTRODUC	CO1	Describe ER model and normalization of or database design
	VR17	01	B.Tech-Civil Engineering		TION TO DATA BASE	CO2	Create, maintain and manipulate a relational database using SQL
56	VR17	01	B.Tech-Civil Engineering	1005173206	MANAGEM ENT	CO3	Design and build database system for a given real world problem
	VR17	01	B.Tech-Civil Engineering		SYSTEMS	CO4	Examine issues in data storage and query processing and can formulate appropriate solutions,
	VR17	01	B.Tech-Civil Engineering			CO1	Examine the working of a photovoltaic system
	VR17	01	B.Tech-Civil	4	A F OPPOSED A OPP	602	Analyze the operation of fuel cells and biomass conversion
57	VR17	01	Engineering B.Tech-Civil	1003173206		CO2	Identify various parts in a wind energy conversion system.
	VR17	01	B.Tech-Civil Engineering		SOURCES	CO4	Suggest alternative resources management like ocean thermal energy conversion and wave energy conversion techniques
	VR17	01	B.Tech-Civil Engineering		HEATING	COI	Conclude the role of HVAC systems for human sustainability
	VR17	01	B.Tech-Civil Engineering		HEATING, VENTILATI ON AND	CO2	Distinguish the behavior, properties and effects of moist air
58	VR17	01	B.Tech-Civil Engineering	1003173205	AIR CONDITION	COI	Estimate heating and cooling loads to design an optimized duct and ventilating system.
	VR17	01	B.Tech-Civil Engineering	1	ING	CO4	Evaluate standard requirements of ventilation for human comfort
	VR17	01	B.Tech-Civil		MOOCs - NPTEL -	CO1	Analyse the sustainability principles in transportation
50	VR17	01	Engineering B.Tech-Civil Engineering	1001173701	Introduction To	CO2	Evaluate the Travel Demand Management (TDM)

در	VRI7	01	B.Tech-Civil Engineering	1001113291	Multimodal Urban	1 1 1 4 1	Develop the techniques of urban public transit planning, operations and management
	VR17	01	B.Tech-Civil Engineering		Transportatio n Systems		Apply the concepts to formulate the intelligent transportation systems (ITS)
	VR17	01	B.Tech-Civil Engineering			COI	Evaluate the index properties of soil that help in analyzing the soil type as per Indian Standard Classification
	VR17	01	B.Tech-Civil Engineering		GEOTECHN ICAL	CO2	Determine seeapge charactreristics of dams and earth embankments
60	VR17	01	B.Tech-Civil Engineering	1001173221	ENGINEERI NG LAB	CO3	Familiarize the compaction characteristics, settlement behaviour of various engineereed structures such as roads,dams,etc.
	VR17	01	B.Tech-Civil Engineering			CO4	Evaluate the strength parameters of diffrent foundation soils.
	VR17	01	B.Tech-Civil Engineering			COI	Analyze water and wastewater by using appropriate techniques
	VR17	01	B.Tech-Civil Engineering	6	ENVIRONM ENTAL	CO2	Solve water and wastewater problems of the society
61	VR17	01	B.Tech-Civil Engineering	1001173222	ENGINEERI NG LAB	CO3	Maintain desirable standards in domestic and industrial water and wastewater
	VR17	01	B.Tech-Civil Engineering			CO4	Function effectively as an individual, and as a member or leader in teams to solve the water and wastewater problems
	VR17	01	B.Tech-Civil Engineering			COI	Make use of the conventional signs and symbols
62	VR17	01	B.Tech-Civil Engineering	1001173223	COMPUTER AIDED	CO2	Draw the plan and sectional elevation of footing
02	VR17	01	B.Tech-Civil Engineering	1001173223	ENGINEERI NG LAB	CO3	Design the plan, elevation and section of single storied and multi storied building
	VR17	01	B.Tech-Civil Engineering			CO4	Develop the plan and cross section of doglegged staircase
	VR17	01	B.Tech-Civil Engineering			COI	Analyze a complex engineering problem and to apply principles of civil engineering and relevant disciplines to idenitfy solutions
63	VR17	01	B.Tech-Civil Engineering	1001173241	INDUSTRY ORIENTED MINI	CO2	Design, implement, and evaluate a solution to meet the requirements in the context of the civil engineering program's discipline
	VR17	01	B.Tech-Civil Engineering		PROJECT	CO3	Apply civil engineering fundamentals to produce proper solutions to real world problems.
	VR17	01	B.Tech-Civil Engineering			CO4	Recognize professional responsibilities and make informed judgments in civil practice based on legal and ethical principles.
	VR17	01	B.Tech-Civil Engineering			COI	Understand the preparation of an Abstract Estimate and detailed estimate of building
i	VR17	01	B.Tech-Civil Engineering		ESTIMATIO	CO2	Calculate the quantity of materials required for civil works as per specifications
64	VR17	01	B.Tech-Civil Engineering	1001174101	N AND CONTRACT	CO3	Determine earth work quantity for roads and canals
	VR17	01	B.Tech-Civil Engineering		S	CO4	Design bar bending schedule for reinforcement works, Identify specifications and tendering process for contracts and create various tender documents for bidding purpose
	VR17	01	B.Tech-Civil Engineering			COI	Correlate Water requirement of different crops in each season.
65	VR17	01	B.Tech-Civil Engineering	1001174102	WATER RESOURCE	CO2	Design lined & unlined canal without impacting the surroundings during floods.
03	VR17	01	B.Tech-Civil Engineering	1001174102	ENGINEERI NG - II	CO3	Distinguish different cross drainage works and canal regulation works.

ſ	VR17	01	B.Tech-Civil	1	[Analyze the safety, stability of Gravity dams.
	VR17	01	Engineering B.Tech-Civil			CO4	Calculate the shear parameters of the soil affected by
-	VKI7	01	Engineering				different drainage conditions
66	VR17	01	B.Tech-Civil Engineering	1001174103	GEOTECHN ICAL	CO2	Prepare the soil investigation report by using suitable field test
00	VR17	01	B.Tech-Civil Engineering	1001174103	ENGINEERI NG - II	CO3	Understand the failure and stability analysis of slopes and retaining walls
	VR17	01	B.Tech-Civil Engineering			CO4	Analyze the bearing capacity of diffrent soils
	VR17	01	B.Tech-Civil Engineering	-1 (14 14 14 1		COI	Plan and design the sewerage systems
Ì	VR17	01	B.Tech-Civil Engineering		ENVIRONM	CO2	Select the appropriate appurtenances in the sewerage
67	VR17	01	B.Tech-Civil	1001174104	ENTAL ENGINEEIR	CO3	systems Design suitable treatment flow for sewage treatment
	VR17	01	Engineering B.Tech-Civil Engineering		NG - II	CO4	Evaluate for critical points of pollution in a river and estimate allowable amounts of pollutant disposal into the river
	VR17	01	B.Tech-Civil Engineering			CO1	Understand the design of different types of RCC retaining walls
٦	VR17	01	B.Tech-Civil Engineering		ADVANCED STRUCTUR	CO2	Carry out analysis and design of Slab bridges, T Carryout analysis and design of different types of RCC water tanks.
68	VR17	01	B.Tech-Civil Engineering	1001174105	AL ENGINEERI	CO3	Understand the design of RCC flat slab
	VR17	01	B.Tech-Civil Engineering		NG	CO4	Understand the design process of Bunkers, Silos Chimney.Understand the design of transmission towers and loading on them.
	VR17	01	B.Tech-Civil Engineering			COI	Analyze the problems of urbanization on hydrological system.
	VR17	01	B.Tech-Civil Engineering		URBAN	CO2	Develop intensity duration frequency curves for urban drainage systems.
69	VR17	01	B.Tech-Civil Engineering	1001174106	HYDROLOG Y	CO3	Use various approaches to estimate peak flow.
	VR17	01	B.Tech-Civil Engineering			CO4	Design the elements of urban drainage system and apply best management practices to manage urban flooding
-	VR17	01	B.Tech-Civil Engineering		GROUND	CO1	Possess the knowledge of various methods of ground improvement and their suitability to different field situations
70	VR17	01	B.Tech-Civil Engineering	1001174107	IMPROVEM	CO2	Understand the concept of Dewatering Techniques.
	VR17	01	B.Tech-Civil Engineering		TECHNIQU	CO3	Understand the stabilization methods and design principles of retaining walls for analysis
	VR17	01	B.Tech-Civil Engineering			CO4	Outline the various function of Geosynthetics and its application in Civil engineering
	VR17	01	B.Tech-Civil Engineering			CO1	Understand The basic of components of pavement, stresses occurred in pavement and Understand The basic elements in design of flexible pavement
71	VR17	01	B.Tech-Civil Engineering	1001174108	PAVEMENT ANALYSIS	CO2	Design of the flexible pavements along with various Standard methods
	VR17	01	B.Tech-Civil Engineering		AND DESIGN	CO3	Design of the Rigid pavements along with various standard methods
	VR17	01	B.Tech-Civil Engineering			CO4	Analysis of Temperature stresses, reinforced slabs
\vdash		01	B.Tech-Civil			CO1	Retrieve the information content of remotely sensed data

72	VR17	01	B.Tech-Civil Engineering	1001174109	REMOTE SENSING AND GIS	CO2	Develop knowledge on conversion of data from analogue to digital and working with GIS software.
	VR17	01	B.Tech-Civil Engineering		APPLICATI ONS	CO3	Understand and Develop models for GIS spatial Analysis
	VR17	01	B.Tech-Civil Engineering	100 100 100		CO4	Apply knowledge of GIS and understand the integration of Remote Sensing and GIS
	VRI7	10	B.Tech-Civil Engineering			CO1	Analyze engineering problems and apply principles of civil engineering and relevant disciplines to identify solutions
73	VR17	01	B.Tech-Civil Engineering	1001174110	INDUSTRY ORIENTED COURSE -	CO2	Design, implement, and evaluate a solution to meet the requirements in the context of the civil engineering program's discipline
	VR17	01	B.Tech-Civil Engineering		MINI PROJECT	CO3	Apply civil engineering fundamentals to produce proper solutions to real world problems.
	VR17	01	B.Tech-Civil Engineering			CO4	Recognize professional responsibilities and make informed judgments in civil practice based on legal and ethical principles.
	VR17	01	B.Tech-Civil Engineering			COI	Identify the concepts and features of object oriented programming in Java.
74	VR17	01	B.Tech-Civil Engineering	1005172104	JAVA PROGRAM	CO2	Describe and implement the programs with command line arguments and Scanner Class.
/	VR17	01	B.Tech-Civil Engineering	1003172104	MING	CO3	Analyze and implement the concepts of Inheritances and Multithreading with real world scenario.
	VR17	01	B.Tech-Civil Engineering			CO4	Develop GUI programs using Applets and Event Handling.
	VR17	01	B.Tech-Civil Engineering			CO1	Understand the concepts behind variational methods and weighted residual methods in FEM.
75	VR17	01	B.Tech-Civil Engineering	1003173201	FINITE ELEMENT	CO2	Identify the application and characteristics of FEA elements such as bars, beams, plane and isoparametric elements.
15	VR17	01	B.Tech-Civil Engineering	1003173201	METHODS	CO3	Apply suitable boundary conditions to a global structural equation, and reduce it to a solvable form.
	VR17	01	B.Tech-Civil Engineering			CO4	Able to identify how the finite element method expands beyond the structural domain, for problems involving dynamics, heat transfer, and fluid flow
	VR17	01	B.Tech-Civil Engineering			CO1	Analyze various types of images mathematically
76	VR17	01	B.Tech-Civil Engineering	1004172207	DIGITAL IMAGE	CO2	Compare image enhancement methods in spatial and frequency domains
70	VR17	01	B.Tech-Civil Engineering	1004173207	PROCESSIN G	CO3	Demonstrate various segmentation algorithms for given image
	VR17	01	B.Tech-Civil Engineering			CO4	Justify different techniques for image compression
	VR17	01	B.Tech-Civil Engineering			COI	Understand data structures concepts for solving computing problems.
77	VR17	01	B.Tech-Civil Engineering	1005172105	DATA STRUCTUR	CO2	Implement standard data structures like stack, queue
11	VR17	01	B.Tech-Civil Engineering	1005172105	ES THROUGH C	CO3	Understand sorting and searching algorithms to the small and large data.
	VR17	01	B.Tech-Civil Engineering			CO4	Apply and Implement basic data structures such as trees for real-time applications
	VR17	01	B.Tech-Civil Engineering			COI	Interpret the roles of Entrepreneur
78	VR17	01	B.Tech-Civil Engineering	1099174101	ENTREPRE NEURSHIP	CO2	Identify the Factors, remedies for sickness of industry
10	VR17	01	B.Tech-Civil Engineering	10291/4101	DEVELOPM ENT	CO3	Summarize capital and financial sources, Govt. polices.

Ī	VR17	01	B.Tech-Civil		Γ		Design Project proposal
-			Engineering B.Tech-Civil			CO4	
	VR17	01	Engineering			COI	Interpret the various aspects of IPR
	VR17	01	B.Tech-Civil Engineering		IPR &	CO2	Conclude importance of Copyrights, Trademarks & Trade Secrets
79	VR17	0.1	B.Tech-Civil	1099173101	PATENTS		
	VKI/	01	Engineering			CO3	Obtain Patent Rights for New Innovations
1	VR17	01	B.Tech-Civil Engineering			CO4	Elaborate on Privacy Issues
	VR17	01	B.Tech-Civil			COI	Organise and create structural memebers by using staad pro
ŀ	-		Engineering		}		software. Generate the thematic map from digitised map. Estimate the
	VR17	01	B.Tech-Civil Engineering		GIS AND		features and develop the digital
80				1001174121	CAD LAB	CO2	elevation model
	VR17	01	B.Tech-Civil Engineering			CO3	Apply GIS software to simple problems in water resources and transportation engineering
Ì	VR17	01	B.Tech-Civil				Analyse & Design a 2 D and 3D frame steel tubular truss
À			Engineering B.Tech-Civil		DESIGN	CO4	using structuralanalysis software
	VR17	01	Engineering		AND	COI	Draft the dimensional views of surplus weir and tank sluice
	VR17	01	B.Tech-Civil Engineering		DRAWING OF	CO2	Contrast the dimensional views of Canal works as per scale
81	VR17	01	B.Tech-Civil	1001174122	HYDRAULI		Illustrate the cross sectional views of various Hydraulic
	VK1/	01	Engineering		C STRUCTUR	CO3	structures
	VR17	01	B.Tech-Civil Engineering		ES	CO4	Categorize the insitu design requirements of different water storage, diversion structures
	VR17	01	B.Tech-Civil Engineering			COI	Apply knowledge of mathematics, science, and engineering in analyzing and interpreting earthquake related problems and providing the optimal and achievable solutions
82	VR17	01	B.Tech-Civil Engineering	1001174201	SOIL DYNAMICS AND	CO2	Design a system, concept, or process to meet the desired needs in solving practical problems considering its technical, professional, and ethical aspects
02	VR17	01	B.Tech-Civil Engineering	1001774201	FOUNDATI ONS	CO3	Impart knowledge that enable the impact of engineering problems and their solutions in global, economic, environmental, and social context.
	VR17	01	B.Tech-Civil Engineering			CO4	Develop skills and techniques to use basic concepts and tools in civil engineering especially in geotechnical engineering problems associated with the dynamic loading.
	VR17	01	B.Tech-Civil Engineering		CONSTRUC	COI	Construct network diagrams and compute critical path, slack and floats for a given network diagram.
	VR17	01	B.Tech-Civil Engineering		TION TECHNOLO	CO2	Apply techniques to optimize time, cost and manpower resources.
83	VR17	01	B.Tech-Civil Engineering	1001174202	GY AND MANAGEM	CO3	Identify the suitable equipment for performing different construction operations.
	VR17	01	B.Tech-Civil	1	ENT		Understand the fundamentals of quality management and
_	7.22.7	7.	Engineering		100	CO4	Safety management systems in construction industry
	VR17	01	B.Tech-Civil Engineering		DD Posto Poc	COI	Understand the concepts of pre-stressing in concrete structures and identify the materials for pre-stressing
84	VR17	01	B.Tech-Civil Engineering	1001174203	PRESTRESS ED CONCRETE	CO2	Calculate the stresses, losses and deflections of pre and post tensioned members.
	VR17	01	B.Tech-Civil Engineering		CONCRETE	CO3	Design flexure and shear reinforcement for prestressed concrete

	VR17	01	B.Tech-Civil Engineering			CO4	Interpet the torsional reinforcement and calculate the
85	VR17	01	B.Tech-Civil Engineering	1001174204	BRIDGE ENGINEERI NG	CO1	anchorage zone stresses in pre and post tension. Explain different types of Bridges with diagrams and
	VR17	01	B.Tech-Civil Engineering			CO2	Loading standards Carry out analysis and design of Slab bridges, T Beam
	VR17	10	B.Tech-Civil			CO3	bridges, Box culvers and suggest structural detailing.
			Engineering B.Tech-Civil				Carry out analysis and design of Plate girder bridges. Understand the stability analysis of Piers. Organize for
	VR17	01	Engineering			CO4	attending inspections and maintenance of bridges and prepare reports. Understand the design of abutments.
	VR17	01	B.Tech-Civil Engineering	1001174205	ENVIRONM ENTAL IMPACT ASSESSME NT AND MANAGEM ENT	COI	Understand evaluate and create the basic concept of environmental impact assessment, Flow of EIA, Types of environmental Impacts
86	VR17	01	B.Tech-Civil Engineering			CO2	ImplementdifferentmethodsinpreparinganEnvironmentalImpactStatement
	VR17	01	B.Tech-Civil Engineering			CO3	Identifyvariousmitigationmeasuresthatcanbeused.
	VR17	01	B.Tech-Civil Engineering			CO4	Select methodology for identification of environmental impacts, environmental indices and indicators
	VR17	01	B.Tech-Civil Engineering	1001174206	SOLID HAZARDOU S WASTE MANAGEM ENT	CO1	Understand the implications of the production, resource management and environmental impact of solid waste management;
87	VR17	01	B.Tech-Civil Engineering			CO2	To apply the knowledge of mathematics, science, and engineering for effective solid waste collection systems, for waste collection route optimization and for processing of solid waste
	VR17	01	B.Tech-Civil Engineering			CO3	To design composting systems, maintain and operate the aerobic and anaerobic composting process for effective organic waste recycling.
	VR17	01	B.Tech-Civil Engineering			CO4	To manage construction and operations of landfill facilities, energy recovery systems and management of leachate systems.
	VR17	01	B.Tech-Civil Engineering	1001174207	WATER RESOURCE S SYSTEMS PLANNING AND MANAGEM ENT	COI	Apply optimization methods to solve problems related to water resource systems
88	VR17	01	B.Tech-Civil Engineering			CO2	Perform basic economic analysis to evaluate the economic feasibility of water resources projects
	VR17	01	B.Tech-Civil Engineering			CO3	Formulate optimization models for decision making in water resources systems.
	VR17	10	B.Tech-Civil Engineering			CO4	Draft simulation models for planning and design of Water Resources Systems
	VR17	01	B.Tech-Civil Engineering	1001174208	TRANSPOR TATION PLANNING	CO1	Understand travel and route choice behaviour
89	VR17	01	B.Tech-Civil Engineering			CO2	Recall basic concepts and methods of urban transportation planning in the India.
	VR17	01	B.Tech-Civil Engineering			CO3	Summarize methods of designing, conducting and administering surveys to provide the data required for transportation planning.
	VR17	01	B.Tech-Civil Engineering			CO4	Examine and apply travel demand modelling, Mode Choice Modelling and Traffic Assignment Modelling.,Formulate the need of land use modelling and illustrate land use models for urban transportation planning.
	VR17	01	B.Tech-Civil Engineering			COI	Analyze a complex engineering problem and to apply principles of civil engineering and relevant disciplines to idenitfy solutions

[B.Tech-Civil	1	ſ		Design, implement, and evaluate a solution to meet the
90	VR17	01	Engineering	1001174281	INTERNSHI P	CO2	requirements in the context of the civil engineering program's discipline
	VR17	01	B.Tech-Civil Engineering			CO3	Apply civil engineering fundamentals to produce proper solutions to real world problems.
	VR17	01	B.Tech-Civil Engineering			CO4_	Recognize professional responsibilities and make informed judgments in civil practice based on legal and ethical principles.
91	VR17	01	B.Tech-Civil Engineering	1001174251	TECHINCAL SEMINAR	COI	Analyze a complex engineering problem and to apply principles of civil engineering and relevant disciplines to identify solutions
	VR17	01	B.Tech-Civil Engineering			CO2	Design, implement, and evaluate a solution to meet the requirements in the context of the civil engineering program's discipline
	VR17	01	B.Tech-Civil Engineering			CO3	Apply civil engineering fundamentals to produce proper solutions to real world problems.
	VR17	01	B.Tech-Civil Engineering			CO4	Recognize professional responsibilities and make informed judgments in civil practice based on legal and ethical principles.
92	VR17	01	B.Tech-Civil Engineering	1001174261	COMPEREH ENSIVE VIVA	COI	Analyze a complex engineering problem and to apply principles of civil engineering and relevant disciplines to idenitfy solutions
	VR17	01	B.Tech-Civil Engineering			CO2	Design, implement, and evaluate a solution to meet the requirements in the context of the civil engineering program's discipline
	VR17	01	B.Tech-Civil Engineering			CO3	Apply civil engineering fundamentals to produce proper solutions to real world problems.
	VR17	01	B.Tech-Civil Engineering			C04	Recognize professional responsibilities and make informed judgments in civil practice based on legal and ethical principles.
93	VR17	01	B.Tech-Civil Engineering	1001174231	MAIN PROJECT	CO1	Analyze a complex engineering problem and to apply principles of civil engineering and relevant disciplines to idenitfy solutions
	VR17	01	B.Tech-Civil Engineering			CO2	Design, implement, and evaluate a solution to meet the requirements in the context of the civil engineering program's discipline
	VR17	01	B.Tech-Civil Engineering			CO3	Apply civil engineering fundamentals to produce proper solutions to real world problems.
	VR17	01	B.Tech-Civil Engineering			CO4	Recognize professional responsibilities and make informed judgments in civil practice based on legal and ethical principles.



