

## MALLAREDDY ENGINEERING COLLEGE AND MANAGEMENT SCIENCES (Approved by AICTE New Delhi & Affiliated to JNTU Hyderabad) Kistapur Village, Medchal, Medchal District-501401

**DEPT. OF COMPUTER SCIENCE & ENGINEERING(Data Science) R-22 COURSE OUTCOMES** S. No CLASS REGULATION Subject Course Code CO's **Course Oucomes** Apply the matrix representation of a set of linear equations and to analyse the solution CO-1 of the system of equations Able to use the Eigen values and Eigen vectors. Reduce the quadratic form to canonical CO-2 I/I **R-22** Matrices and Calculus MA101BS form using orthogonal transformations 1 Analyze the nature of sequence and series. CO-3 near value meorems. Evaluate the improper integrals CO-4 CO-5 Estimate the extreme values of functions of two variables with/ without constraints. Describe The knowledge of atomic, molecular and electronic changes, band theory CO-1 related to conductivity Develop innovative methods to produce soft water for industrial use and potable water CO-2 at cheaper cost 2 I/IR-22 Engineering Chemistry CH102BS Apply The required principles and concepts of electrochemistry, corrosion and CO-3 inunderstanding the problem of water and its treatments. electron chemistry Analyse The knowledge of confrontational and confirmation analysis of molecules and CO-4 reaction mechanisms CO-5 Explain concepts on basic spectroscopy and application to medical and other fields Able to formulate the algorithm for simple problem and able to translate given algorithm CO-1 to working and correct program CO-2 Demonstrate the use of arrays, structure and pointers 3 I/I R-22 Programming For Problem Solving CS103ES CO-3 Able to create, read and write to and append to from simple text and binary files CO-4 understand about the function and dynamic memory allocation and deal location CO-5 Apply different searching and sorting technique on array elements CO-1 Analyze and solve electrical circuits using network theorems. CO-2 construct and analyze simple AC circuits 4 I/I R-22 **Basic Electrical Engineering** EE104ES CO-3 Analyze single phase and three phase transformer CO-4 Construct and analyze the working principles of Electrical Machines CO-5 Investigate the knowledge on batteries and Protective Equipment's. Apply computer aided drafting tools to create 2D and 3D objects CO-1 CO-2 sketch conics and different types of solids CO-3 Apply the knowledge of Sectional views of solids and Development of surfaces of solids 5 R-22 I/I **Computer Aided Engineering Graphics** ME105ES CO-4 Demonstrate Read and interpret engineering drawings Conversion of orthographic projection into isometric view and vice versa manually and CO-5 by using computer aided drafting Know the working principles of functional units of a basic Computer CO-1

	6			Elements Of Computer Science &		CO-2	Understand program development, the use of data structures and algorithms in problem solvSing.
		1/1	R-22	Engineering	CS106ES	CO-3	Know the need and types of operating system, database systems.
				2		CO-4	Understand the significance of networks, internet, WWW and cyber security.
						CO-5	Understand Autonomous systems the application of artificial intelligence
-						005	Apply the method like hardness of water and rate of corrosion of mild steel in various
						CO-1	conditions
							Students are analyzing the various water complex with different methods and various
						CO-2	Students are analyzing the various water samples with different methods and various
							water treatment methods for industrial usages.
	7	I/I	R-22	Engineering Chemistry Lab	CH107BS		Students are able to able to perform methods such as conductometry, potentiometry and
						CO-3	pH metry in order to find out the concentrations or equivalence points of acids and
							bases
						CO-4	Students are able to create polymers like Bakelite and nylon-6.
						CO 5	Students are able to evaluate the saponification value, surface tension and viscosity of
					1	0-5	lubricant oils
						CO-1	Translate the given algorithm to a working and correct program
						CO-2	Identify and correct logical errors encountered during execution
	8	I/I	R-22	Programming For Problem Solving Lab	CS108ES	CO-3	Manipulate data with arrays strings and structures
						CO-4	creater read and write to and from simple text and binary files
						CO-5	Modularize the code with functions so that they can be reused
						CO-1	Remember an exposure to basic electrical laws
	9	I/I	R-22	Basic Electrical Engineering Lab	EE109ES	CO-2	Understand the response of different types of electrical circuits to different excitations.
							Evaluate the measurement, calculation and relation between the basic electrical
						CO-3	parameters
						CO 4	Analyze the basic characteristics of transformers and its connections
						CO-4	Differencies the performance of different machines using different methods
-					+	CO-3	Identify whether the given differential equation of first order is avect or not
		I/II	R-22	Ordinary Differential Equations and Vector Calculus	MA201BS	CO-1	Identify whether the given differential equation of first order is exact or not.
						CO-2	Solve nigher differential equation with constant coefficients
							Apply the concept to find ordinary differential equations using Laplace transforms
						CO-4	techniques
							Explain gredients, potential functions, directional derivatives of functions of several
							variables.
						CO-5	Evaluate the line, surface and volume integrals and converting them from one to another
						000	
						CO-1	Apply the fundamental concepts on Quantum behavior of matter in its microstate.
							Understand the of fundamentals of Semiconductor Physics, Optoelectronics which
						CO-2	evaluate the students to apply to various systems like communication, solar cell,
							photocell etc.,
	11	I/II	B 22	A multiple Discology	DUDODE	CO 2	Analyze the principle, working of various Laser systems and light propagation through
	11	I/II	R-22	Applied Physics	PH202BS	0-3	Optical Fibers.
						CO-4	Design, Analyze Characterize, and study the properties of materials and to prepare new
							materials for various engineering applications.
						CO-5	Evaluate the Laws of Electromagnetism and get an exposure on Magnetic and Dielectric
							materials.
F						CO-1	Able to Study and practice on machine tools and their operations
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	I/II	R-22	Engineering Workshop	ME105ES	CO-2	Analyze manufacturing of components using workshop trades including pluming, fitting, carpentry, foundry, house wiring and welding.
12					CO-3	Identify and apply suitable tools for different trades of Engineering processes including drilling material removing measuring chiefing
					CO-4	Apply basic electrical engineering knowledge for house wiring practice
					CO-5	Ability to design and model different Prototypes in the Carpentry Trade Such as cross
						Lap Joint and Dovetail Joint.
					<u>CO-1</u>	Use English Language effectively in spoken and written forms.
					<u>CO-2</u>	Intrupt the given text sand respond appropriately.
13	I/II	R-22	English For Skill Enhancement	En204HS	CO-3	Demonstrate confidently in various contexts and different cultures.
					CO-4	Execute basic proficiency in English including reading and listening comprehension, writing and speaking skills.
					CO-5	Apply new oral vocabulary words in context to reinforce meaning.
					CO-1	Acquire the knowledge of various electronic devices and their use on real life.
					CO-2	Know the applications of various devices.
14	T/TT	D 00		ECONFER	CO-3	Evaluate the knowledge of special purpose devices and their applications.
14	1/11	R-22	Electronic Devices and Circuits	EC205ES	CO-4	To apply knowledge about the role of voltages and capacitors for electronic application
					CO-5	To explore concept of Zener Diode - Characteristics.
					CO-1	Develop the application specific codes using python.
		R-22 R-22 R-22 R-22 R-22 R-22			CO-2	Understand Strings, Lists, Tuples and Dictionaries in Python
15	I/II		Python Programming Laboratory     Applied Physics Laboratory     English Language and Communication Laboratory     IT Workshop     Digital Electronics	CS206ES PH207BS EN208HS CS209ES	CO-3	Verify programs using modular approach, file I/O. Python standard library
					CO-4	Implement Digital Systems using Python
					CO-5	Implement program to implement Half Adder, Full Adder
					CO-1	Understand the characteristics of Photo emitters and Photo detectors
					CO-2	Construct RC & LCR circuit in Series and parallel.
					CO-3	Study the magnetic field variation along the axis of the circular coil carrying current.
16	1/11				CO-4	Understand the working of Optical fiber and find the values of Numerical Aperture and Bending Losses
					CO-5	Find the value of Energy gap and Hall coefficient of a given semiconductor material
	1					student be able to intrupt nuances of English language through audio- visual experience
	I/II				CO-1	and group activities
					CO-2	Use Speaking skills clearly with the right accent and intonation
17					CO-3	Stdent will organize Speaking skills with clarity and confidence which in turn enhances their employ ability skills
					CO-4	Able to Implement Neutralization of accent for intelligibility
					CO-5	Understand and apply knowledge of human communication and language process
					CO-1	Perform Hardware troubleshooting
					CO-2	Understand Hardware components and inter dependencies
18	I/II				CO-3	Safeguard computer systems from viruses/worms
10	1/11				CO-4	Document/ Presentation prenaration
	ПЛ				CO-5	Perform calculations using spreadsheets
					CO-1	Know the characteristics of various components
				DS301PC	CO-2	Understand the utilization of components
20					CO-2	Design and analyze small signal amplifier circuits
20					CO-4	Design and analyze combinational and sequential circuits
					CO 5	Know about the logic families and realization of logic gates
				1	0-5	Know about the logic families and realization of logic gates.

					CO-1	Ability to select the data structures that efficiently model the information in a problem.
					CO-2	Ability to assess efficiency trade-offs among different data structure implementations or combinations.
21	II/I	R-22	Data Structures	DS302PC	CO-3	Implement and know the application of algorithms for sorting and pattern matching
					CO-4	Design programs using a variety of data structures, including hash tables, binary and
				I		general tree structures, search trees, tries, neaps, graphs, and AVL-trees.
					CO-5	lawrage the strengths of specific data structures to solve problems efficiently
					CO-1	Apply the concents of probability and distributions to case studies
					0-1	Formulate and solve problems involving random variables and apply statistical methods
					CO-2	for analyzing experimental data
22	II/I	R-22	Computer Oriented Statistical Methods	DS303PC	CO-3	Apply concept of estimation and testing of hypothesis to case studies
					CO-4	Correlate the concepts of one unit to the concepts in other units
					CO-5	Apply concept of Stochastic Processes and Markov Chains
					CO-1	Understand the basics of instructions sets and their impact on processor design
						Demonstrate an understanding of the design of the functional units of a digital computer
					CO-2	system.
23	II/I	R-22	Computer Organization and Architecture	DS304PC	~~ ·	Evaluate cost performance and design trade-offs in designing and constructing a
				DUSTINE	CO-3	computer processor including memory.
					CO-4	Design a pipeline for consistent execution of instructions with minimum hazards
					CO-5	Recognize and manipulate representations of numbers stored in digital computers
	ПЛ	R-22	Object Oriented Programming Through Java	DS305PC	CO-1	Able to solve real world problems using OOP techniques
					CO-2	Able to understand the use of abstract classes.
24					CO-3	Able to solve problems using java collection framework and I/o classes.
					CO-4	Able to develop multithreaded applications with synchronization.
					CO-5	Able to develop applets for web applications
	П/І		Data Structures Lab	DS306PC		Ability to develop C programs for computing and real-life applications using basic
					CO-1	elements like control statements, arrays, functions, pointers and strings, and data
						structures like stacks, queues and linked lists.
		R-22			CO-2	Ability to Implement searching and sorting algorithms
25					CO-3	Proficient in implementing algorithms associated with data structures, such as sorting
					003	and searching algorithms, graph traversal, and tree traversal algorithms.
					CO-4	Will analyse the time and space complexity of their data structure implementation
					CO-5	Understand how different data structures affect the performance of various operations.
					CO 1	Able to write programs for solving real world problems using java collection frame
					0-1	work
		R-22			CO-2	Able to write programs using abstract classes
26	Π/Ι		Object Oriented Programming Through Java Lab	DS307PC	CO-3	Able to write multithreaded programs
					CO-4	Able to write GUI programs using swing controls in Java
					CO-5	Understand multithreading concepts in Java and learn how to write concurrent programs
						to leverage modern hardware capabilities.
					CO 1	Understand the importance of Environmental education, conservation of natural
					0-1	resources & understand the importance of ecosystems and biodiversity

27 10.1 R-22 General Sensitization Lab MC:09 CO.3 Apply the environmental science knowledge to improve the resources. CO-4   28 10.1 R-22 Skill Development Connet/Data Visualization & Programming /Power BD CO-5 Mentify the improvision and unserves. CO-1 Skill Development Connet/Data Visualization & Programming /Power BD   29 10.11 R-22 Skill Development Connet/Data Visualization & Programming /Power BD DS308FC CO-1 CO-3 Develop Program and understand how to may Visual Layouts and Conplical Program and understand how to may Visualizations (CO-3)   29 10.11 R-22 Discrete Mathematics DS400FC CO-3 Develop Program and understand how to may Visualizations   30 10.11 R-22 Discrete Mathematics DS400FC CO-3 Database dama and and the first science of providing solutions to real world Properties.   30 10.11 R-22 Discrete Mathematics SM402MS CO-3 Database dama and construct provide modulase structures.   31 10.11 R-22 Operating Systems DS400FC CO-3 The Standerst and study for firms's financial provide provide structure forms's financial provide provide structure forms's financial provide							CO-2	Understand the pollution problems and Apply the environmental science knowledge on solid waste management, disaster management
20 10.1 10.2 Obtain 3 similar and Lab 10.5,057   21 10.1 10.2 Obtain 3 similar and Lab 10.5,057   22 10.1 10.2 Obtain 3 similar and the same similar and the same similar and some and names are some same similar products and some and some similar according to a prove dynamic accos cultures, and the product in products and the similar products are similar and the similar products and the sin product and sin products and the similar products and t		27	II/I	D 22	General Sensitization Lab	MC200	CO-3	Apply the environmental science knowledge to improve the resources
Image: constraint of the second se		21		K-22		MC309	CO-4	Identify the interactions and intersections of identities (e.g., gender, race, ethnicity, class, sexuality, and so on) and assess the ways in which they contribute to instances of privilege and power dynamics across cultures, space, and time. And their problems
28 II/I R-22 Skill Development CoursetData Visualization-R Programming./Power BD DS308PC CO-1 Understand Tableau concerget of Dimensions and Masures.   29 II/I R-22 Discrete Mathematics DS308PC CO-3 Develop Programs and understand how to map Visual Layouts and Graphical Properties.   29 II/I R-22 Discrete Mathematics DS401PC CO-4 Create 1 Dashboard that links multiple visualizations   30 II/I R-22 Discrete Mathematics DS401PC CO-3 Apply fogle and so the counting problems on Table and discrete anternation.   30 II/II R-22 Business Economics & Financial Analysis SM402MS CO-4 Understand fabreations France for providing sognetes.   31 II/II R-22 Operating Systems SM402MS CO-1 Understand fabreations france fabreation of the maps of economic variables constructs.   32 II/II R-22 Operating Systems DS403PC CO-1 With the basic of rankets and industry trends, asses competitive forces, and strategic basiness decisions that any the shared CO-1 Single counting construct on Business consolitions.   32 II/II R-22 Database Management Systems DS403PC CO-1 With basic or construct merely and single systems.   32 II/II R-22 Database Management Sys							CO-5	Identified problem can be taken for case study and find out solution.
28 II/I R-22 Still Development Course(Data Visualization-R Programming /Power III) DS308C CO-2 Understand Tableau concepts of Dimension and Measures. CO-3 CO-4   29 II/II R-22 Discrete Mathematics DS401PC CO-4							CO-1	Understand How to import data into Tableau.
28 II/I R-22 Skill Development Course(Data Visualization-R Programming /Power BI) DS308PC CO-3 Develop Programs and understand how to map Visual Layouts and Graphical Properties.   29 II/II R-22 Discrete Mathematics DS401PC CO-4 Create a Dashboard that links multiple visualizations   29 II/II R-22 Discrete Mathematics DS401PC CO-4 Create a Dashboard that links multiple visualizations   30 II/II R-22 Discrete Mathematics DS401PC CO-4 Apply zeat dolve counting problems and manipulate sequences   30 II/II R-22 Discrete Mathematics DS401PC CO-1 Discrete Mathematics   30 II/II R-22 Discrete Mathematics SM402MS CO-2 The Demand.Supply.Production, Cost. Market Structure, Pricing aspects are learn Manalysis   30 II/II R-22 Destines and manipulate sequences CO-1 Interest of a Company.   31 II/II R-22 Operating Systems DS403PC CO-1 Interest of a Company.   32 II/II R-22 Operating Systems DS403PC CO-1 Interest of a Company.   33 II/II R-22 Operating Systems DS403PC CO-1 Understand the consoler of predise to make conditins. </td <td></td> <td></td> <td></td> <td></td> <td></td> <td rowspan="2">DS308PC</td> <td>CO-2</td> <td>Understand Tableau concepts of Dimensions and Measures.</td>						DS308PC	CO-2	Understand Tableau concepts of Dimensions and Measures.
Co-4     Cene a Dashboard that links multiple visualizations       29     II/II     R-22     Discrete Mathematics     CO-1     Use graphical user interfaces to create Frames for providing solutions to real words molerns       29     II/II     R-22     Discrete Mathematics     DS-401PC     CO-2     Apply logic and set theory to formulate precise statements       30     II/II     R-22     Discrete Mathematics     DS-401PC     CO-4     Describe and manipulate sequences       30     II/II     R-22     Business Economics & Financial Analysis     SM402MS     CO-1     Understand the various Forms of Business and the impact of economic variables c Business       30     II/II     R-22     Business Economics & Financial Analysis     SM402MS     CO-1     Understand the various Forms of Business and the impact of economic variables c Business       31     II/II     R-22     Operating Systems     DS403PC     CO-3     Able to analyze and residuation the first strature and their tespective ro comparing       31     II/II     R-22     Operating Systems     DS403PC     CO-3     Ablity to recognize and resolve user problems with standard operating systems, architecture interact with Indivator devices       32     II/II <td></td> <td>28</td> <td>II/I</td> <td>R-22</td> <td>Skill Development Course(Data</td> <td>CO-3</td> <td>Develop Programs and understand how to map Visual Layouts and Graphical Properties.</td>		28	II/I	R-22	Skill Development Course(Data		CO-3	Develop Programs and understand how to map Visual Layouts and Graphical Properties.
Image: constraint of the second sec					Visualization-K Flogramming /Fower BI)		CO-4	Create a Dashboard that links multiple visualizations
29 II/II R-22 Discrete Mathematics DS401PC CO-1 Understand and construct precise mathematical proofs   30 II/II R-22 Discrete Mathematics DS401PC CO-2 Analyze and solve counting problems on finite and discrete structures   30 II/II R-22 Business Economics & Financial Analyzis SM402MS CO-4 Describe and manipulate sequences   30 II/II R-22 Business Economics & Financial Analysis SM402MS CO-4 Describe and manipulate sequences   30 II/II R-22 Business Economics & Financial Analysis SM402MS CO-4 Describe and manipulate sequences   31 II/II R-22 Describe and spinos SM402MS CO-4 Describe and manipulate sequences   32 II/II R-22 Operating Systems DS403PC CO-4 Understand the various Forms of Business and the impact of economic set spinos   31 II/II R-22 Operating Systems DS403PC CO-1 Will be able to control access to a computer and their respective ro computing   32 II/II R-22 Database Management Systems DS403PC CO-3 Able to analyze and resolve user problems with standard operating systems architectures interact and how to use each effectively.   32 II/II R-22							CO-5	Use graphical user interfaces to create Frames for providing solutions to real world problems
29 II/II R-22 Discrete Mathematics DS40IPC CO-2 Apply logic and set theory to formulate precise statements.   30 II/II R-22 Discrete Mathematics DS40IPC CO-3 Analyze and solve counting problems on finite and discrete structures.   30 II/II R-22 Business Economics & Financial Analysis SM402M5 CO-2 The Demand, Supply, Production, Cost, Market Structure, Pricing aspects are learn Business and the impact of economic variables of Business.   30 II/II R-22 Business Economics & Financial Analysis SM402M5 CO-2 The Demand, Supply, Production, Cost, Market Structure, Pricing aspects are learn Business.   31 II/II R-22 Operating Systems Describe Amathematics of a Company. Learn how to apply economic principles to make rational decisions in various bus scenarios, considering factors like opportunity cost, marginal analysis, and cost-banalysis.   31 II/II R-22 Operating Systems DS403PC CO-1 Will be able to control access to a computer and their respective ro computing analysis, sind cost-banalysis.   32 II/II R-22 Operating Systems DS403PC CO-1 Will be able to control access to a computer and their respective ro computing analysis, and cost-banalysis.   33 II/II R-22 Operating Systems DS403PC CO-1 Will be able to control access t							CO-1	Understand and construct precise mathematical proofs
29 II/II R-22 Discrete Mathematics DS401PC CO-3 Analyze and solve counting problems on finite and discrete structures   30 II/II R-22 Business Economics & Financial Analysis statement or a Co-3 CO-4 Understand the various Forms of Business and the impact of economic variables of Business   30 II/II R-22 Business Economics & Financial Analysis SM402MS CO-4 Understand the various Forms of Business and the impact of economic variables of Business   30 II/II R-22 Business Economics & Financial Analysis SM402MS CO-2 The Demand, Supply, Production, Cost, Market Structure, Pricing aspects are learn CO-3   31 II/II R-22 Operating Systems SM402MS CO-4 The Students can study the firm's financial position by analysin, and cost-bi- analysis.   31 II/II R-22 Operating Systems DS403PC CO-4 Will be able to control access to a computer and their respective to computing   32 II/II R-22 Database Management Systems DS404PC CO-4 Gain practical knowledge of how programming languages, operating systems architectures interact and how to use each effectively.   32 II/II R-22 Database Management Systems DS404PC CO-4 Gain practical knowledge of how programming languages, operating systems architectures interact and how to use eac							CO-2	Apply logic and set theory to formulate precise statements
30   II/II   R-22   Business Economics & Financial Analysis   SM402MS   CO-3   CO-4   Describe and manipulate sequences     30   II/II   R-22   Business Economics & Financial Analysis   SM402MS   CO-1   Understand the various Forms of Business and the impact of economic variables of Business     30   II/II   R-22   Business Economics & Financial Analysis   SM402MS   CO-2   The Demand, Supply, Production, Cost, Market Structure, Pricing aspects are learn CO-3     31   II/II   R-22   Operating Systems   SM402MS   CO-1   Understand the various Forms of Business economic or principles to make rational decisions in various bus scannes, considering factors like opportunity cost, marginal analysis, and cost-b analysis.     31   II/II   R-22   Operating Systems   DS403PC   CO-1   Mill be able to control access to a computer and their respective ro computing     32   II/II   R-22   Database Management Systems   DS404PC   CO-1   Gain practical knowledge of how programming languages, operating systems, architectures interact and how to use each effectively.     32   II/II   R-22   Database Management Systems   DS404PC   CO-1   Gain involvedge of fundamentals of DBMS, database design and normal forms of and procestrelex of thomagement of data.		29	II/II	R-22	Discrete Mathematics	DS401PC	CO-3	Analyze and solve counting problems on finite and discrete structures
$\frac{   }{                                $							CO-4	Describe and manipulate sequences
30   II/II   R-22   Business Economics & Financial Analysis   SM402MS   CO-1   Business   CO-2   The Demand, Supply, Production, Cost, Market Structure, Pricing aspects are leam     30   II/II   R-22   Business Economics & Financial Analysis   SM402MS   CO-3   The Demand, Supply, Production, Cost, Market Structure, Pricing aspects are leam     31   II/II   R-22   Operating Systems   CO-4   Learn how to apply economic principles to make rational decisions in various bus scenarios, considering factors like opportunity cost, marginal analysis, and cost-bi analysis.     31   II/II   R-22   Operating Systems   DS403PC   CO-4   Will be able to control access to a computer and the fire shared operating systems     32   II/II   R-22   Dperating Systems   DS403PC   CO-3   Ability to recognize and resolve user problems with standard operating environmen computing     32   II/II   R-22   Database Management Systems   DS404PC   CO-3   Ability to recognize and resolve user problems with standard operating systems architectures interact and how to use each effectively.     33   II/II   R-22   Database Management Systems   DS404PC   CO-4   Gain practical knowledge of how programming languages, operating systems, architectures interact and how to use each effectively. <td></td> <td></td> <td></td> <td></td> <td></td> <td>CO-5</td> <td>Apply graph theory in solving computing problems</td>							CO-5	Apply graph theory in solving computing problems
30   II/II   R-22   Business Economics & Financial Analysis   SM402MS           CO-2 The Demand, Supply. Production, Cost, Market Structure, Pricing aspects are learn The Students can study the firm's financial position by analysing the Financial Statements of a Company. Learn how to apply conomic principles to make rational decisions in various bus scenarios, considering factors like opportunity cost, marginal analysis, and cost-b- analysis.      31   II/II   R-22   Operating Systems          Support S			П/П	R-22	Business Economics & Financial Analysis Operating Systems Database Management Systems	SM402MS DS403PC	CO-1	Understand the various Forms of Business and the impact of economic variables on the Business
30   II/II   R-22   Business Economics & Financial Analysis   SM402MS   CO-3   The Students can study the firm's financial position by analysing the Finit Statements of a Company.     30   II/II   R-22   Business Economics & Financial Analysis   SM402MS   CO-3   The Students can study the firm's financial position by analysing the Finit Statements of a Company.     30   II/II   R-22   Business Economics & Financial Analysis   SM402MS   Learn how to apply economic principles to make rational decisions in various bus scenarios, considering factors like opportunity cost, marginal analysis, and cost-bu analysis.     31   II/II   R-22   Operating Systems   DS403PC   CO-1   Will be able to control access to a computer and the files that may be shared     32   II/II   R-22   Operating Systems   DS403PC   CO-3   Ability to recognize and resolve user problems with standard operating environmen architectures interact and how to use each effectively.     32   II/II   R-22   Database Management Systems   DS404PC   CO-3   Bater the basics of SQL for retrieval and management of data.     32   II/II   R-22   Database Management Systems   DS404PC   CO-4   Gain practical knowledge of transaction processing and normal forms co-system interacts with hardware devices		30					CO-2	The Demand, Supply, Production, Cost, Market Structure, Pricing aspects are learnt
30   IIII   IIII   Analysis   Initial analysis   Initial analysis     31   II/II   R-22   Operating Systems   DS403PC   CO-4   Learn how to apply economic principles to make rational decisions in various bus scenarios, considering factors like opportunity cost, marginal analysis, and cost-bu analysis.     31   II/II   R-22   Operating Systems   DS403PC   CO-4   Learn how to apply economic principles to make rational decisions in various bus scenarios, considering factors like opportunity cost, marginal analysis, and cost-bu analysis.     31   II/II   R-22   Operating Systems   DS403PC   CO-1   Will be able to control access to a computer and their respective ro computing     32   II/II   R-22   Operating Systems   DS403PC   CO-3   Ability to recognize and resolve user problems with standard operating environmen architectures interact and how to use each effectively.     32   II/II   R-22   Database Management Systems   DS404PC   CO-3   Gain knowledge of fundamentals of DBMS, database design and normal forms CO-3   CO-4   Gain knowledge of fundamentals of DBMS, database design and normal forms CO-3   CO-3   Mater the basics of SQL for retrieval and management of data.     32   II/II   R-22   Database Management Systems   DS404PC   CO-3							CO-3	The Students can study the firm's financial position by analysing the Financial Statements of a Company.
31   II/II   R-22   Operating Systems   DS403PC   CO-3   Able to analyze markets and industry trends, assess competitive forces, and strategic business decisions based on market conditions.     31   II/II   R-22   Operating Systems   DS403PC   CO-1   Will be able to control access to a computer and the files that may be shared     32   II/II   R-22   Operating Systems   DS403PC   CO-3   Ablity to recognize and resolve user problems with standard operating environmen computing     32   II/II   R-22   Database Management Systems   DS404PC   CO-4   Gain practical knowledge of how programming languages, operating systems, architectures interact and how to use each effectively.     32   II/II   R-22   Database Management Systems   DS404PC   CO-4   Gain how ledge of fundamentals of DBMS, database design and normal forms CO-2     32   II/II   R-22   Database Management Systems   DS404PC   CO-3   Be acquainted with the basics of SQL for retrieval and management of data.							CO-4	Learn how to apply economic principles to make rational decisions in various business scenarios, considering factors like opportunity cost, marginal analysis, and cost-benefit analysis.
$\frac{31}{32}  II/II  R-22  Operating Systems  Operating System  Operating Systems  Operating Systemsy$							CO-5	Able to analyze markets and industry trends, assess competitive forces, and make strategic business decisions based on market conditions.
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				R-22 R-22			CO-1	Will be able to control access to a computer and the files that may be shared
31   II/II   R-22   Operating Systems   DS403PC   CO-3   Ability to recognize and resolve user problems with standard operating environmen     31   II/II   R-22   Operating Systems   DS403PC   CO-3   Ability to recognize and resolve user problems with standard operating environmen     CO-4   Gain practical knowledge of how programming languages, operating systems   architectures interact and how to use each effectively.     CO-5   Learn about device drivers, I/O operations, interrupt handling, and how the oper system interacts with hardware devices     32   II/II   R-22   Database Management Systems   DS404PC   CO-1   Gain knowledge of fundamentals of DBMS, database design and normal forms     CO-4   Familiarity with database strage structures and access techniques     32   II/II   R-22   Database Management Systems   DS404PC   CO-3   Be acquainted with the basics of SQL for retrieval and management of data.     CO-4   Familiarity with database strage structures and access techniques   CO-4   Familiarity with database strage structures and access techniques     CO-5   Sub dy distributed database systems and the challenges associated with data distrib and projection.   CO-1   Structure the requirements in a Software Requirements Document (SRD).			П/П				CO-2	Demonstrate the knowledge of the components of computer and their respective roles in computing
32   II/II   R-22   Database Management Systems   Database Management Systems   CO-4   Gain practical knowledge of how programming languages, operating systems and how to use each effectively.     32   II/II   R-22   Database Management Systems   Database Management Systems   CO-4   Gain practical knowledge of how programming languages, operating systems     32   II/II   R-22   Database Management Systems   Database Management Systems   CO-1   Gain knowledge of fundamentals of DBMS, database design and normal forms     CO-3   Be acquainted with the basics of SQL for retrieval and management of data.   CO-3   Be acquainted with the basics of transaction processing and concurrency control.     CO-4   Familiarity with database storage structures and access techniques     CO-5   Study distributed database systems and the challenges associated with data distrib and replication.		31					CO-3	Ability to recognize and resolve user problems with standard operating environments.
32   II/II   R-22   Database Management Systems   Database Management Systems   CO-1   Gain knowledge of fundamentals of DBMS, database design and normal forms     CO-2   Master the basics of SQL for retrieval and management of data.     CO-3   Be acquainted with the basics of transaction processing and concurrency control.     CO-4   Familiarity with database storage structures and access techniques     CO-5   Study distributed database systems and the challenges associated with data distrib and replication.     CO-6   Study distributed database systems and the challenges associated with data distrib and replication.							CO-4	Gain practical knowledge of how programming languages, operating systems, and architectures interact and how to use each effectively.
32   II/II   R-22   Database Management Systems   Database Management Systems   CO-1   Gain knowledge of fundamentals of DBMS, database design and normal forms     32   II/II   R-22   Database Management Systems   DS404PC   CO-3   Be acquainted with the basics of SQL for retrieval and management of data.     CO-4   Familiarity with database storage structures and access techniques     CO-5   Study distributed database systems and the challenges associated with data distrib and replication.     CO-1   Structure the requirements in a Software Requirements Document (SRD).							CO-5	Learn about device drivers, I/O operations, interrupt handling, and how the operating system interacts with hardware devices
32   II/II   R-22   Database Management Systems   DS404PC   CO-2   Master the basics of SQL for retrieval and management of data.     32   II/II   R-22   Database Management Systems   DS404PC   CO-3   Be acquainted with the basics of transaction processing and concurrency control.     CO-4   Familiarity with database storage structures and access techniques     CO-5   Study distributed database systems and the challenges associated with data distrib and replication.     CO-1   structure the requirements in a Software Requirements Document (SRD).							CO-1	Gain knowledge of fundamentals of DBMS, database design and normal forms
32   II/II   R-22   Database Management Systems   DS404PC   CO-3   Be acquainted with the basics of transaction processing and concurrency control.     32   II/II   R-22   Database Management Systems   DS404PC   CO-3   Be acquainted with the basics of transaction processing and concurrency control.     CO-4   Familiarity with database storage structures and access techniques     CO-5   Study distributed database systems and the challenges associated with data distrib and replication.     CO-1   structure the requirements in a Software Requirements Document (SRD).		32				DS404PC	CO-2	Master the basics of SQL for retrieval and management of data.
CO-4 Familiarity with database storage structures and access techniques   CO-5 Study distributed database systems and the challenges associated with data distrib and replication.   CO-1 structure the requirements in a Software Requirements Document (SRD).							CO-3	Be acquainted with the basics of transaction processing and concurrency control.
CO-5 Study distributed database systems and the challenges associated with data distrib and replication.   CO-1 Study distributed database systems and the challenges associated with data distrib and replication.							CO-4	Familiarity with database storage structures and access techniques
CO-1 structure the requirements in a Software Requirements Document (SRD).							CO-5	Study distributed database systems and the challenges associated with data distribution and replication.
							CO-1	structure the requirements in a Software Requirements Document (SRD).

22	нл	D 22	S-famore Encirconia -	DS405DC	CO-2	Identify and apply appropriate software architectures and patterns to carry out high level
35	11/11	K-22	Software Engineering	D3405FC	CO-3	design of a system and be able to critically compare alternative choices.
				1		will have experience and/or awareness of testing problems and will be able to develop a
						simple testing report
					CO-1	Simulate and implement operating system concepts such as scheduling, deadlock
				1	<u> </u>	management, file management and memory management.
					0-2	Able to implement C programs using Unix system calls
24	пл	D 22	On anting Sectors Lab	DEADCDC	CO-3	Will work with threads and understand how to create, manage, and synchronize threads
34	11/11	K-22	Operating Systems Lab	D5400PC		in a multi-threaded environment.
					CO-4	Will experiment with different CPU scheduling algorithms, such as round-robin,
						priority-based, and shortest job first, and analyze their performance.
			Database Management Systems Lab		CO-5	Perform various file system operations, including file creation, reading, writing, and
						deletion, while understanding the impact of different file system structures.
				1	CO-1	Design database schema for a given application and apply normalization
					CO-2	Acquire skills in using SQL commands for data definition and data manipulation.
25		R-22		DS407PC	CO-3	Develop solutions for database applications using procedures, cursors and triggers
35	11/11				CO-4	Learn how to design and implement databases based on specific requirements, including
						creating tables, defining relationships, and ensuring data integrity.
					CO-5	Become proficient in using SQL (Structured Query Language) to perform various
					~ ~ ~	database operations
	П/П	R-22	Real Time Research Project/Field Based     Project     Constitution Of India     Skill Development Course(Node JS/React     JS/Django	DS408PC	CO-1	Apply his/her knowledge to understand the industrial applications
36					CO-2	Observe the process of problem identification its formulation and solution.
					CO-3	Prepare a detailed report on the work carried
					CO-4	Present in front of the evaluation committee and other participants
				*MC410	CO-1	Discuss the growth of the demand for civil rights in India for the bulk of Indians before
		R-22				the arrival of Gandhi in Indian politics.
					CO-2	Discuss the intellectual origins of the framework of argument that informed the
						conceptualization of social reforms leading to revolution in India.
37						Discuss the circumstances surrounding the foundation of the Congress Socialist Party
					CO-3	[CSP] under the leadership of Jawaharlal Nehru and the eventual failure of the proposal
						of direct under the leadership of Jawaharlal Nehru and the eventual failure of the
		R-22				proposal of direct elections through adult suffrage in the Indian Constitution
					CO-4	Discuss the passage of the Hindu Code Bill of 1956.
				DS409PC	CO-1	Build a custom website with HTML, CSS, and Bootstrap and little JavaScript.
					CO-2	Demonstrate Advanced features of JavaScript and learn about JDBC
38	II/II				CO-3	Develop Server – side implementation using Java technologies like
					CO-4	Develop the server – side implementation using Node JS.
					CO-5	Design a Single Page Application using React.