



VAAGESWARI COLLEGE OF ENGINEERING

Beside LMD Police Station, Ramakrishna Colony,
KARIMNAGAR, Telangana state – 505 527
Affiliated to Jawaharlal Nehru Technological University Hyderabad,
Approved by AICTE New Delhi

B. TECH - CIVIL ENGINEERING

R22 Regulation

Course Outcomes		
Course Title with Code	#	Statement
Mathematics	CO1	Differentiation and integration of complex valued functions
	CO2	Evaluation of integrals using Cauchy's integral formula, Residue theorem
	CO3	Laurent's series expansion of complex functions
	CO4	Express a periodic function by Fourier series and a non-periodic function by Fourier transform
	CO5	To analyze the displacements of one dimensional wave and distribution of one dimensional heat equation
Strength of Materials - I	CO1	Analyze the statically determinate and indeterminate problems
	CO2	Analyze shear force and bending moments in beams
	CO3	Determine the stresses and strains in the members subjected to axial bending
	CO4	Evaluate slope and deflection of beams subjected to loads
	CO5	Determine the principal stresses and strains in the structural members
Building Materials, Construction and Planning	CO1	Identify various building materials required for construction & planning.
	CO2	Analyse the importance of mineral and chemical admixtures, requirements of the concrete in construction
	CO3	Explain different types of lintel, arches and the materials which are commonly used for construction.
	CO4	Understand masonry, english and flemish bonds. finishing plastering painting and know about building services.
	CO5	Principle of building planning and by laws and standards of building material Components and orientation of the building.
Surveying	CO1	Calculate angles, distances and levels
	CO2	Identify data collection methods and prepare field notes
	CO3	Understand the working principles of survey instruments
	CO4	Estimate measurement errors and apply corrections
Strength of Materials Lab	CO1	Conduct tension test on Materials like steel etc.
	CO2	Conduct compression tests on spring, wood and concrete
	CO3	Conduct flexural and torsion test to determine elastic constants
	CO4	Determine hardness of metals

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	CO5	Conduct impact test on Materials like aluminum, cast iron and mild steel.
Computer Aided Design – I Lab	CO1	Software for CAD – Introduction to different software's and Practice exercises on CAD software
	CO2	Drawing of plans of buildings using software a) Single storied buildings b) multi storied buildings
	CO3	Developing sections and elevations for a) Single storied buildings b) multi storied buildings
	CO4	Detailing of building components like Doors, Windows, Roof Trusses etc. using CAD software's
	CO5	Exercises on development of working drawings of buildings
Gender Sensitization Lab	CO1	Students will have developed a better understanding of important issues related to gender in contemporary India.
	CO2	Students will be sensitized to basic dimensions of the biological, sociological, psychological and legal aspects of gender. This will be achieved through discussion of materials derived from research, facts, everyday life, literature and film.
	CO3	Students will attain a finer grasp of how gender discrimination works in our society and how to counter it
	CO4	Students will acquire insight into the gendered division of labor and its relation to politics and economics
	CO5	Men and women students and professionals will be better equipped to work and live together as equals.
Strength of Materials - II	CO1	Determine stresses in the member subjected to Torsion
	CO2	Analyze columns and struts
	CO3	Understand the concept of direct and bending stresses
	CO4	Analyze and design springs, thin and thick cylinders
	CO5	Understand the concept of unsymmetrical bending
Fluid Mechanics - II	CO1	Understand the concepts of channel flows.
	CO2	Compute flow profiles in channel transitions and analyze hydraulic transients
	CO3	Design the working proportions of hydraulic machines
	CO4	Understand the working principles for various and working of different components of Kaplan, Francis and Pelton turbines.
	CO5	Understand the concept of NPSH, performance of pumps and working efficiency.
Structural Analysis	CO1	Analyze Perfect , Imperfect And Redundant Frames
	CO2	Formulate Equilibrium and compatibility equations for structural members
	CO3	Analyze one dimensional and two dimensional problems using classical methods
	CO4	Analyze indeterminate structures
	CO5	Analyze structures for gravity loads, moving loads and lateral loads
Engineering Geology	CO1	Understand weathering process and mass movement.
	CO2	Distinguish geological formations.
	CO3	Identify geological structures and processes for rock mass quality.
	CO4	Identify subsurface information and groundwater potential sites through geophysical investigations.

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	CO5	Apply geological principles for mitigation of natural hazards and select sites for dams and tunnels.
Engineering	CO1	Understand the elasticity of the demand of the product, different types, measurement of elasticity of demand and factors influencing on elasticity of demand.
Business Economics & Financial Analysis		Enumerate the features, price-output determination under Perfect Competition, Monopoly and Monopolistic competition Markets.
	CO2	Illustrate the Significance of financial accounting, double entry system, accounts, accounting concepts and convention
	CO3	Study the firm's financial position by analyzing the Financial Statements of a Company
	CO4	Understand the elasticity of the demand of the product, different types, measurement of elasticity of demand and factors influencing on elasticity of demand.
	CO5	Enumerate the features, price-output determination under Perfect Competition, Monopoly and Monopolistic competition Markets.
Surveying – II Lab	CO1	Determine of area using total station
	CO2	Traversing using total station
	CO3	Contouring using total station
	CO4	Determination of remote height using total station
	CO5	Finding position of stations using G.P.S
Engineering geology Lab	CO1	Study of physical properties and identification of minerals referred under theory
	CO2	Megascopic description and identification of rocks referred under theory and Microscopic study of rocks
	CO3	Interpretation and drawing of sections for geological maps showing tilted beds, faults, uniformities etc
	CO4	Simple Structural Geology problems
	CO5	Electrical resistivity meter
Environmental Science and Technology	CO1	Improve his/her pronunciation.
	CO2	Take part in role-plays and perform effectively in real-life situations.
	CO3	Choose appropriate words and phrases to make effective telephonic conversations
	CO4	Minimize stage fear and make effective presentations.
	CO5	Build sustained conversations.
Engineering Exploration	CO1	Describe various types of ecosystems its components and inter-relationship between man and environment
	CO2	Understand the relevance and importance of the natural resources in the sustenance of life on earth and living standard.
	CO3	Explain on threats and innovative methods for conservation of biodiversity
	CO4	Ability to use methods, and strategies to investigate and interpret the pollution problems.
	CO5	Understand the importance of EIA for developmental activities to have minimum negative impacts on people
Concrete Technology	CO1	Identify quality control tests on concrete making materials

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	CO2	Understand the behavior of fresh and hardened concrete
	CO3	Design concrete mixes as per IS and ACI Codes
	CO4	Understand the durability requirements of concrete
	CO5	Understand the need for special concretes
(Design of Reinforced Concrete Structures)	CO1	Design RC Structural elements
	CO2	Design the Reinforced concrete beams using limit state Design
	CO3	Design Reinforced concrete slabs
	CO4	Design the Reinforced Concrete Columns and footings
	CO5	Design structures for serviceability, staircases , canopy
Water Resources Engineering	CO1	Understand the importance of hydrology and able to calculate the average rainfall over a basin, losses from the rainfall such as evaporation, evapo-transpiration, infiltration etc.
	CO2	Understand hydrograph methods, the types of hydrograph and their applications, the concept of ground water and its occurrence.
	CO3	Understand the Occurrence of Ground water and complete concept of well development
	CO4	Analyze the importance of irrigation, types and methods required for various types of crops during various seasons and stages of growth and its method of application.
	CO5	Design of canals by using different methods like Kennedys and lacey's theorem.
Fundamentals of Management	CO1	The students understand the significance of Management in their Profession.
	CO2	The various Management Functions like Planning, Organizing
	CO3	The various Management Functions like, Staffing, Leading
	CO4	The various Management Functions like Motivation and Control aspects are learnt in this course.
	CO5	The students can explore the Management Practices in their domain area.
Fundamentals of mechanical engineering	CO1	Understand the scope of mechanical engineering
	CO2	Its impact on society
	CO3	Know about different fields of applications of Mechanical Engineering
	CO4	Its interrelationship with other fields of science and engineering.
	CO5	Development of current specializations under Mechanical Engineering and their scope.
Concrete Technology Lab	CO1	To Understand the Properties of concrete materials and behavior of concrete
	CO2	To Understand the concept of fresh concrete
	CO3	To Understand the properties hardened concrete
	CO4	Design and test concrete mix
	CO5	Conduct Non-destructive tests on concrete
Geographical Information Systems	CO1	To understand the concept of Geographical information system
	CO2	Georeferencing of cadastral map & AutoCAD Maps
	CO3	Digitization & GIS coordination
	CO4	Mapping the field problems and solution convergence through GIS

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	CO5	Analyze spatial and attribute data for solving spatial problems.
Hydraulics and Hydraulic Machinery Lab	CO1	Compute drag coefficients
	CO2	Test the performance of pumps and turbines
	CO3	Determine Manning's and Chezy's coefficients for smooth and rough channels
	CO4	Determine energy loss in hydraulic jump and calibrate standing wave flume
	CO5	Calibrate flow discharge measuring device used in pipe channels and tanks.
Professional Ethics	CO1	The students identify the importance of human values and skills for sustained happiness.
	CO2	The students strike a balance between profession and personal happiness/goals.
	CO3	The students realize / explain the significance of trust, mutually satisfying human behavior and enriching interaction with nature.
	CO4	The students develop / propose appropriate technologies
	CO5	Management patterns to create harmony in professional and personal life
Design of Steel Structures	CO1	Design tension and compression members
	CO2	Design beams and beam columns
	CO3	Design bolt and weld connections
	CO4	Design built up members and column base
	CO5	Design of plate girders and roof trusses
Environmental Engineering	CO1	Analyze characteristics of water and wastewater
	CO2	Estimate the quantity of drinking water and domestic wastewater generated
	CO3	Design components of water supply systems and design sewerage system
	CO4	Design skimming tank, grit chambers , sedimentation tanks, septic tank and sludge digestion tank.
	CO5	Ability to analyze, examine different physical, chemical and biological properties of water
Soil Mechanics	CO1	Understand the mechanism behavior of soil for different loads
	CO2	Analyze the properties and factors of permeability
	CO3	Evaluate the various stress distribution of soils
	CO4	Understand the principles of compaction and its control., Compute and analyze the consolidation settlements
	CO5	Identify shear strength parameters for field conditions.
Ground Water Development and Management	CO1	Understand ground water occurrence
	CO2	Understand Water Movement
	CO3	Evaluate groundwater resources using geophysical methods
	CO4	Model regional groundwater flow

Soil Mechanics Lab	CO1	Determine index properties of soils
	CO2	Classify soils
	CO3	Determine engineering properties of soils
	CO4	Determine the coefficient of consolidation
	CO5	Determine the shear strength parameters of soil
Computer Aided Design - II Lab	CO1	Detailing of reinforcement in cantilever , simply supported and continuous beams
	CO2	Detailing of reinforcement in canopy & columns
	CO3	Detailing of reinforcement in RC isolated footings square, one-way to two-way slabs, rectangular, circular and combined footings, dog-legged staircases
	CO4	Drawing of steel bolted, welded connections, steel compression and tension members
	CO5	Drafting of steel beams-built-up sections, steel plate girder and steel roof truss.
Advanced English Communication Skills Lab	CO1	Acquire vocabulary and use it contextually
	CO2	Listen and speak effectively
	CO3	Develop proficiency in academic reading and writing
	CO4	Increase possibilities of job prospects
	CO5	Communicate confidently in formal and informal contexts
Transportation Engineering	CO1	Understand the plan and highway network.
	CO2	Design of highway geometries.
	CO3	Understand the traffic engineering parameters & its regulation.
	CO4	Understand the patterns of interaction design.
	CO5	Design of flexible and rigid pavements.
Estimation Quantity Surveying and Valuation	CO1	Explain the different types of estimator.
	CO2	Prepare detailed estimate and bar bending schedule for different the element.
	CO3	Estimate the earthwork for roads and canals.
	CO4	Evaluate the rates for various item of work in the rate analysis.
	CO5	Apply standard specifications, prepare contract documents and evaluate the valuates of buildings.
Rehabilitation and Retrofitting of Structures	CO1	Recognize the mechanism of deterioration of structures and various maintenance.
	CO2	Able of examine the damages occurred in reinforced concrete building.
	CO3	Evaluate the existing buildings through field investigations.
	CO4	Understand and use the different techniques for repairs and structural retrofitting.
	CO5	Adopt methods in health monitoring of structures.
Ground Improvement	CO1	Identify different types of soils and institute and laboratory tests to characterize soils.
	CO2	Classify various mechanical modification techniques like blasting, vibro

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Techniques		compaction, dynamic compaction and compaction piles.
	CO3	Identify various dewatering methods, their choice and various hydraulic ground modification techniques.
	CO4	Apply the concept of soil modification by physical and chemical methods.
	CO5	Explain soil reinforcement technique, reinforcement with strip, insitu ground reinforcement, ground anchors and soil nailing.
Irrigation and Hydraulic Structures	CO1	Identify various types of reservoir & twin design aspects.
	CO2	Analyze & design of gravity dam.
	CO3	Classification and design of earthen dams & spillways.
	CO4	Plan and design diversion head works.
	CO5	Explain the concept of cross drainage works.
Transportation Engineering Lab	CO1	Identify the properties and behavior of highway material for different loading patterns.
	CO2	Understand the properties of highway material by conducting specific gravity & water absorption.
	CO3	Understand techniques to characterize various pavement material through relevant test.
	CO4	Understand the different types of traffic studies.
	CO5	Able to understand the types of parking studies.
Environmental Engineering Lab	CO1	Categorize the different physical, chemical & biological properties of water
	CO2	Categorize the different physical, chemical & biological properties of water
	CO3	Find the PH in given water sample.
	CO4	Find the chemicals content in water sample.
	CO5	Determine the alkalinity & acidity the water sample.
Industry Oriented Mini Project	CO1	Enrich the concept of the construction techniques, equipment used.
	CO2	Enrich the knowledge of project planning through visiting sites.
	CO3	To enhance the knowledge in software skills.
	CO4	Able to prepare the document works.
	CO5	Generate models for various construction techniques & equipment.
Seminar	CO1	Able to show the competence in identifying relevant information defining and explaining topic.
	CO2	Understand when to speak and how much to say.
	CO3	Demonstrates clarity the strengths their statement.
	CO4	Able to make use of visual audio & audio visual to support their PPT.
	CO5	Planning speech presentation in a compelling, well structures logical sequence.
Total Quality Management	CO1	To know what is Total Quality Management how it is going to implemented in real time in manufacturing and service industry.
	CO2	To prerequisite of TQM and how to maintained the relationship with the customer, and evaluation of Bench marking in manufacturing and service industry.
	CO3	Evaluation of seven tools of TQM and how to maintain the Quality circles in real-time in manufacturing and service industry.
	CO4	Understanding the Cost of Quality of different companies of different sectors in Accounting system and Quality management system.
	CO5	How to maintained the different certifications of ISO in manufacturing and service industry.

Pavement Design	CO1	Characterize the response characteristics of soil, aggregate, asphalt & asphalt mixes.
	CO2	Analyze flexible pavements
	CO3	Analyze rigid pavements
	CO4	Design a flexible pavement using IRC, Asphalt Institute & AASHTO methods
	CO5	Design a rigid pavement using IRC and AASHTO methods.
Industrial Waste Water Treatment	CO1	Recall the technical knowledge gained from previous courses
Major Project	CO2	Select equipment usage in the laboratories concerned with the project
	CO3	Apply project management skills (scheduling work, procuring parts and documenting expenditures and working within the confines of a deadline).
	CO4	Analyze, develop and demonstrate methodology used for the experiments for the concerned projects in civil Engineering
	CO5	Conclude from obtained technical information by means of written reports

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE OUTCOMES (COs)

B.Tech. II Year I Sem. R22 Regulation Computer Science and Engineering


Course Title / Name	Course Outcomes
Analog and Digital Electronics	<p>At the end of this course, each student should be able to:</p> <p>CO1: Know the characteristics of various components.</p> <p>CO2: Understand the utilization of components.</p> <p>CO3: Design and analyze small signal amplifier circuits.</p> <p>CO4: Learn Postulates of Boolean algebra and to minimize combinational functions</p> <p>CO5: Design and analyze combinational and sequential circuits</p> <p>CO6: Know about the logic families and realization of logic gates.</p>
Data Structures	<p>At the end of this course, each student should be able to:</p> <p>CO1: Ability to select the data structures that efficiently model the information in a problem.</p> <p>CO2: Ability to assess efficiency trade-offs among different data structure implementations or combinations.</p> <p>CO3: Implement and know the application of algorithms for sorting and pattern matching.</p> <p>CO4: Design programs using a variety of data structures, including hash tables, binary and general tree structures, search trees, tries, heaps, graphs, and AVL-trees.</p>


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Computer Oriented Statistical Methods	<p>At the end of this course, each student should be able to:</p> <p>CO1: Apply the concepts of probability and distributions to some case studies</p> <p>CO2: Correlate the material of one unit to the material in other units</p> <p>CO3: Resolve the potential misconceptions and hazards in each topic of study.</p>
Computer Organization and Architecture	<p>At the end of this course, each student should be able to:</p> <p>CO1: Understand the basics of instructions sets and their impact on processor design.</p> <p>CO2: Demonstrate an understanding of the design of the functional units of a digital computer system.</p> <p>CO3: Evaluate cost performance and design trade-offs in designing and constructing a computer processor including memory.</p> <p>CO4: Design a pipeline for consistent execution of instructions with minimum hazards.</p> <p>CO5: Recognize and manipulate representations of numbers stored in digital computers.</p>
Object Oriented Programming using C++	<p>At the end of this course, each student should be able to:</p> <p>CO1: Able to develop programs with reusability.</p> <p>CO2: Develop programs for file handling.</p> <p>CO3: Handle exceptions in programming.</p> <p>CO4: Develop applications for a range of problems using object-oriented programming Techniques.</p>
Analog and Digital Electronics Lab	<p>At the end of this course, each student should be able to:</p> <p>CO1: Know the characteristics of various components.</p> <p>CO2: Understand the utilization of components.</p> <p>CO3: Design and analyze small signal amplifier circuits.</p> <p>CO4: Postulates of Boolean algebra and to minimize combinational functions</p> <p>CO5: Design and analyze combinational and sequential circuits</p> <p>CO6: Known about the logic families and realization of logic gates.</p>


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Data Structures Lab	<p>At the end of this course, each student should be able to:</p> <p>CO1: Ability to develop C programs for computing and real-life applications using basic elements like control statements, arrays, functions, pointers and strings, and data structures like stacks, queues and linked lists.</p> <p>CO2: Ability to Implement searching and sorting Algorithms.</p>
IT Workshop Lab	<p>At the end of this course, each student should be able to:</p> <p>CO1: Identify various hardware components of a System.</p> <p>CO2: Assemble the computer.</p> <p>CO3: Use various Microsoft tools.</p>
C++ Programming Lab	<p>At the end of this course, each student should be able to:</p> <p>Ability to develop applications for a range of problems using object-oriented programming techniques</p>
Gender Sensitization Lab	<p>At the end of this course, each student should be able to:</p> <p>CO1: Students will have developed a better understanding of important issues related to gender in contemporary India.</p> <p>CO2: Students will be sensitized to basic dimensions of the biological, sociological, psychological and legal aspects of gender. This will be achieved through discussion of materials derived from research, facts, everyday life, literature and film.</p> <p>CO3: Students will attain a finer grasp of how gender discrimination works in our society and how to counter it.</p> <p>CO4: Students will acquire insight into the gendered division of labour and its relation to politics and economics.</p> <p>CO5: Men and women students and professionals will be better equipped to work and live together as equals.</p> <p>CO6: Students will develop a sense of appreciation</p>



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		<p>of women in all walks of life.</p> <p>CO7: Through providing accounts of studies and movements as well as the new laws that provide protection and relief to women, the textbook will empower students to understand and respond to gender violence.</p>
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B.Tech. II Year II Sem R22 Regulation Computer Science and Engineering

Course Title / Name	Course Outcomes
Discrete Mathematics	<p>At the end of this course, each student should be able to:</p> <p>CO1: Ability to understand and construct precise mathematical proofs.</p> <p>CO2: Ability to use logic and set theory to formulate precise statements.</p> <p>CO3: Ability to analyze and solve counting problems on finite and discrete structures.</p> <p>CO4: Ability to describe and manipulate sequences.</p> <p>CO5: Ability to apply graph theory in solving computing problems.</p>
Business Economics & Financial Analysis	<p>At the end of this course, each student should be able to:</p> <p>The students will understand the various Forms of Business and the impact of economic variables on the Business. The Demand, Supply, Production, Cost, Market Structure, Pricing aspects are learnt. The Students can study the firm's financial position by analysing the Financial Statements of a Company.</p>
Operating Systems	<p>At the end of this course, each student should be able to:</p> <p>CO1: Will be able to control access to a computer and the files that may be shared.</p> <p>CO2: Demonstrate the knowledge of the components of computer and their respective roles in computing.</p> <p>CO3: Ability to recognize and resolve user problems with standard operating environments.</p> <p>CO4: Gain practical knowledge of how programming languages, operating systems, and architectures interact and how to use each effectively.</p>
Database Management Systems	<p>At the end of this course, each student should be able to:</p> <p>CO1: Gain knowledge of fundamentals of DBMS,</p>

	<p>database design and normal forms</p> <p>CO2: Master the basics of SQL for retrieval and management of data.</p> <p>CO3: Be acquainted with the basics of transaction processing and concurrency control.</p> <p>CO4: Familiarity with database storage structures and access techniques</p>
Java Programming	<p>At the end of this course, each student should be able to:</p> <p>CO1: Able to solve real world problems using OOP techniques.</p> <p>CO2: Able to understand the use of abstract classes.</p> <p>CO3: Able to solve problems using java collection framework and I/o classes.</p> <p>CO4: Able to develop multithreaded applications with synchronization.</p> <p>CO5: Able to develop applets for web applications.</p> <p>CO6: Able to design GUI based applications.</p>
Operating Systems Lab	<p>At the end of this course, each student should be able to:</p> <p>CO1: Simulate and implement operating system concepts such as scheduling, deadlock management, file management and memory management.</p> <p>CO2: Able to implement C programs using Unix system calls.</p>
Database Management Systems Lab	<p>At the end of this course, each student should be able to:</p> <p>CO1: Design database schema for a given application and apply normalization</p> <p>CO2: Acquire skills in using SQL commands for data definition and data manipulation.</p> <p>CO3: Develop solutions for database applications using procedures, cursors and triggers</p>
Java Programming Lab	<p>At the end of this course, each student should be able to:</p> <p>CO1: Able to write programs for solving real world problems using java collection framework.</p> <p>CO2: Able to write programs using abstract classes.</p> <p>CO3: Able to write multithreaded programs.</p> <p>CO4: Able to write GUI programs using swing controls in Java.</p>


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Constitution of India	<p>At the end of this course, each student should be able to:</p> <p>CO1 : Able to understand historical background of the constitutional making and its importance for building a democratic India, the structure of Indian government, the structure of state government, the local Administration.</p> <p>CO2: Able to apply the knowledge on directive principle of state policy, the knowledge in strengthening of the constitutional institutions like CAG, Election Commission and UPSC for sustaining democracy.</p> <p>CO3: Able to analyze the History, features of Indian constitution, the role Governor and Chief Minister, role of state election commission, the decentralization of power between central, state and local self-government.</p> <p>CO4: Able to evaluate Preamble, Fundamental Rights and Duties, Zilla Panchayat, block level organization, various commissions of viz SC/ST/OBC and women.</p>
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B.Tech. III Year I Sem R22 Regulation Computer Science and Engineering

Course Title / Name	Course Outcomes
Formal Languages & Automata Theory	<p>At the end of this course, each student should be able to:</p> <p>CO1: Able to understand the concept of abstract machines and their power to recognize the languages.</p> <p>CO2: Able to employ finite state machines for modeling and solving computing problems.</p> <p>CO3: Able to design context free grammars for formal languages.</p> <p>CO4: Able to distinguish between decidability and undecidability.</p> <p>CO5: Able to gain proficiency with mathematical tools and formal methods.</p>


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Software Engineering	<p>At the end of this course, each student should be able to:</p> <p>CO1: Ability to translate end-user requirements into system and software requirements, using e.g. UML, and structure the requirements in a Software Requirements Document (SRD).</p> <p>CO2: Identify and apply appropriate software architectures and patterns to carry out high level design of a system and be able to critically compare alternative choices.</p> <p>CO3: Will have experience and/or awareness of testing problems and will be able to develop a simple testing report</p>
Computer Networks	<p>At the end of this course, each student should be able to:</p> <p>CO1: Gain the knowledge of the basic computer network technology.</p> <p>CO2: Gain the knowledge of the functions of each layer in the OSI and TCP/IP reference model.</p> <p>CO3: Obtain the skills of subnetting and routing mechanisms.</p> <p>CO4: Familiarity with the essential protocols of computer networks, and how they can be applied in network design and implementation.</p>
Web Technologies	<p>At the end of this course, each student should be able to:</p> <p>CO1: gain knowledge of client-side scripting, validation of forms and AJAX programming.</p> <p>CO2: Understand server-side scripting with PHP Language.</p> <p>CO3: Understand what is XML and how to parse and use XML Data with Java.</p> <p>CO4: To introduce Server-side programming with Java Servlets and JSP.</p>
Professional Elective-I : Information Theory & Coding	<p>At the end of this course, each student should be able to:</p> <p>CO1: Learn measurement of information and errors.</p> <p>CO2: Obtain knowledge in designing various source codes and channel codes.</p> <p>CO3: Design encoders and decoders for block and cyclic codes.</p> <p>CO4: Understand the significance of codes in various applications.</p>

Professional Elective-I : Advanced Computer Architecture	At the end of this course, each student should be able to: CO1: Computational models and Computer Architectures. CO2: Concepts of parallel computer models. CO3: Scalable Architectures, Pipelining, Superscalar processors, multiprocessors.
Professional Elective-I : Data Analytics	At the end of this course, each student should be able to: CO1: Understand the impact of data analytics for business decisions and strategy CO2: Carry out data analysis/statistical analysis CO3: To carry out standard data visualization and formal inference procedures. CO4: Design Data Architecture. CO5: Understand various Data Sources.
Professional Elective-I : Image Processing	At the end of this course, each student should be able to: CO1: Demonstrate the knowledge of the basic concepts of two-dimensional signal acquisition, sampling, and quantization.
	CO2: Demonstrate the knowledge of filtering techniques. CO3: Demonstrate the knowledge of 2D transformation techniques. CO4: Demonstrate the knowledge of image enhancement, segmentation, restoration and compression techniques.
Professional Elective-I : Principles of Programming Languages	At the end of this course, each student should be able to: CO1: Acquire the skills for expressing syntax and semantics in formal notation. CO2: Identify and apply a suitable programming paradigm for a given computing application. CO3: Gain knowledge of and able to compare the features of various programming languages.

Professional Elective –II: Computer Graphics	<p>At the end of this course, each student should be able to:</p> <p>CO1: Acquire familiarity with the relevant mathematics of computer graphics.</p> <p>CO2: Be able to design basic graphics application programs, including animation</p> <p>CO3: Be able to design applications that display graphic images to given specifications</p>
Professional Elective –II: Advanced Operating Systems	<p>At the end of this course, each student should be able to:</p> <p>CO1: Understand the design approaches of advanced operating systems.</p> <p>CO2: Analyze the design issues of distributed operating systems.</p> <p>CO3: Evaluate design issues of multi processor operating systems.</p> <p>CO4: Identify the requirements Distributed File System and Distributed Shared Memory.</p> <p>CO5: Formulate the solutions to schedule the real time applications.</p>
Professional Elective –II: Informational Retrieval Systems	<p>At the end of this course, each student should be able to:</p> <p>CO1: Ability to apply IR principles to locate relevant information large collections of data.</p> <p>CO2: Ability to design different document</p>
	<p>clustering algorithms.</p> <p>CO3: Implement retrieval systems for web search tasks.</p> <p>CO4: Design an Information Retrieval System for web search tasks.</p>
Professional Elective –II: Distributed Databases	<p>At the end of this course, each student should be able to:</p> <p>CO1: Understand theoretical and practical aspects of distributed database systems.</p> <p>CO2: Study and identify various issues related to the development of distributed database system.</p> <p>CO3: Understand the design aspects of object-oriented database system and related development.</p>

Professional Elective –II: Natural Language Processing	<p>At the end of this course, each student should be able to:</p> <p>CO1: Show sensitivity to linguistic phenomena and an ability to model them with formal grammars.</p> <p>CO2: Understand and carry out proper experimental methodology for training and evaluating empirical NLP systems.</p> <p>CO3: Able to manipulate probabilities, construct statistical models over strings and trees, and estimate parameters using supervised and unsupervised training methods.</p> <p>CO4: Able to design, implement, and analyze NLP Algorithms.</p> <p>CO5: Able to design different language modeling Techniques.</p>
Software Engineering Lab	<p>At the end of this course, each student should be able to:</p> <p>CO1: Ability to translate end-user requirements into system and software requirements.</p> <p>CO2: Ability to generate a high-level design of the system from the software requirements.</p> <p>CO3: Will have experience and/or awareness of testing problems and will be able to develop a simple testing report.</p>
Computer Networks & Web Technologies Lab	<p>At the end of this course, each student should be able to:</p> <p>CO1: Implement data link layer framing methods.</p>
	<p>CO2: Analyze error detection and error correction codes.</p> <p>CO3: Implement and analyze routing and congestion issues in network design.</p> <p>CO4: Implement Encoding and Decoding techniques used in presentation layer.</p> <p>CO5: To be able to work with different network Tools.</p>


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Advanced Communication Skills Lab	<p>At the end of this course, each student should be able to:</p> <p>CO1: To improve fluency in English through a well developed vocabulary and enable them to listen at normal conversational speed by educated English speakers and respond appropriately in different socio cultural and professional context.</p> <p>CO2: Further, they would be required to communicate their ideas relevantly and coherently in writing .</p> <p>CO3: To prepare all the students for their Placements.</p> <p>CO4: Learn to overcome stage fear and make presentations with ease.</p> <p>CO5: Learn how to pronounce words using the rules they have been taught.</p>
Intellectual Property Rights	<p>At the end of this course, each student should be able to:</p> <p>CO1: Identify different types of Intellectual Properties (IPs), the right of ownership, scope of protection as well as the ways to create and to extract value from IP.</p> <p>CO2: Recognize the crucial role of IP in organizations of different industrial sectors for the purposes of product and technology development.</p> <p>CO3: Identify activities and constitute IP infringements and the remedies available to the IP owner and describe the precautionary steps to be taken to prevent infringement of proprietary rights in products and technology development.</p> <p>CO4: Be familiar with the processes of Intellectual</p>

		<p>Property Management (IPM) and various approaches for IPM and conducting IP and IPM auditing and explain how IP can be managed as a strategic resource and suggest IPM strategy.</p> <p>CO5: Be able to anticipate and subject to critical analysis arguments relating to the development and reform of intellectual property right institutions and their likely impact on creativity and innovation.</p> <p>CO6: Be able to demonstrate a capacity to identify, apply and assess ownership rights and marketing protection under intellectual property law as applicable to information, ideas, new products and product marketing;</p>
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Course Title / Name	Course Outcomes
Machine Learning	<p>At the end of this course, each student should be able to:</p> <p>CO1: Understand the concepts of computational intelligence like machine learning .</p> <p>CO2: Ability to get the skill to apply machine learning techniques to address the real time problems in different areas.</p> <p>CO3: Understand the Neural Networks and its usage in machine learning application.</p>
Compiler Design	<p>At the end of this course, each student should be able to:</p> <p>CO1: Demonstrate the ability to design a compiler given a set of language features.</p> <p>CO2: Demonstrate the knowledge of patterns, tokens & regular expressions for lexical analysis.</p> <p>CO3: Acquire skills in using lex tool & yacc tool for developing a scanner and parser.</p> <p>CO4: Design and implement LL and LR parsers.</p> <p>CO5: Design algorithms to do code optimization in order to improve the performance of a program in terms of space and time complexity.</p> <p>CO6: Design algorithms to generate machine code.</p>

Design and Analysis of Algorithms	<p>At the end of this course, each student should be able to:</p> <p>CO1: Ability to analyze the performance of algorithms</p> <p>CO2: Ability to choose appropriate data structures and algorithm design methods for a specified application.</p> <p>CO3: Ability to understand how the choice of data structures and the algorithm design methods impact the performance of programs.</p>
Professional Elective-III : Concurrent Programming	<p>At the end of this course, each student should be able to:</p> <p>CO1: Ability to implement the mechanisms for</p>
	<p>communication and co-ordination among concurrent processes.</p> <p>CO2: Ability to understand and reason about concurrency and concurrent objects.</p> <p>CO3: Ability to implement the locking and non-blocking mechanisms .</p> <p>CO4: Ability to understand concurrent objects.</p>
Professional Elective-III : Network Programming	<p>At the end of this course, each student should be able to:</p> <p>CO1: To write socket API based programs .</p> <p>CO2: To design and implement client-server applications using TCP and UDP sockets.</p> <p>CO3: To analyze network programs.</p>
Professional Elective-III : Scripting Languages	<p>At the end of this course, each student should be able to:</p> <p>CO1: Comprehend the differences between typical scripting languages and typical system and application programming languages.</p> <p>CO2: Gain knowledge of the strengths and weakness of Perl, TCL and Ruby; and select an appropriate language for solving a given problem.</p> <p>CO3: Acquire programming skills in scripting Language.</p>

Professional Elective-III : Mobile Application Development	At the end of this course, each student should be able to: CO1: Student understands the working of AndroidOS Practically. CO2: Student will be able to develop Android userInterfaces. CO3: Student will be able to develop, deploy and maintain the Android Applications.
Professional Elective-III : Software Testing Methodologies	At the end of this course, each student should be able to: Design and develop the best test strategies in accordance to the development model.
Open Elective-I	
Machine Learning Lab	At the end of this course, each student should be able to: CO1: Understand complexity of Machine Learning algorithms and their limitations.
	CO2: Understand modern notions in data analysis-oriented computing. CO3: Be capable of confidently applying common Machine Learning algorithms in practice and implementing their own. CO4: Be capable of performing experiments in Machine Learning using real-world data.
Compiler Design Lab	At the end of this course, each student should be able to: CO1: Design and develop interactive and dynamic web applications using HTML, CSS, JavaScript and XML. CO2: Apply client-server principles to develop scalable and enterprise web applications. CO3: Ability to design, develop, and implement a compiler for any language. CO4: Able to use lex and yacc tools for developing a scanner and a parser. CO5: Able to design and implement LL and LR parsers.
Professional Elective-III Lab: Concurrent Programming	At the end of this course, each student should be able to: CO1: The conceptual foundations of concurrent programming. CO2: A variety of effective ways of structuring concurrent and distributed programs.



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Professional Elective-III Lab: Network Programming	At the end of this course, each student should be able to: CO1: To write socket API based programs. CO2: To design and implement client-server applications using TCP and UDP sockets . CO3: To analyze network programs.
Professional Elective-III Lab : Scripting Languages	At the end of this course, each student should be able to: CO1: Ability to understand the differences between Scripting languages and programming languages CO2: Able to gain some fluency programming in Ruby, Perl, TCL.
Professional Elective-III Lab: Mobile Application Development	At the end of this course, each student should be able to: CO1: Student understands the working of Android OS Practically. CO2: Student will be able to develop user interfaces. CO3: Student will be able to develop, deploy and maintain the Android Applications.
Professional Elective-III Lab : Software Testing Methodologies	At the end of this course, each student should be able to: Design and develop the best test strategies in accordance to the development model.
Environmental Science	At the end of this course, each student should be able to: Based on this course, the Engineering graduate will understand /evaluate / develop technologies on the basis of ecological principles and environmental regulations which in turn helps in sustainable development


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B.Tech. IV Year I Sem R22 Regulation Computer Science and Engineering

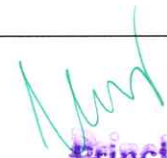
Course Title / Name	Course Outcomes
Data Mining	<p>At the end of this course, each student should be able to:</p> <p>CO1: Ability to perform the preprocessing of data and apply mining techniques on it.</p> <p>CO2: Ability to identify the association rules, classification and clusters in large data sets.</p> <p>CO3: Ability to solve real world problems in business and scientific information using data mining</p> <p>CO4: Ability to classify web pages, extracting knowledge from the web</p>
Principles of Programming Languages	<p>At the end of this course, each student should be able to:</p> <p>CO1: Ability to express syntax and semantics in formal notation.</p> <p>CO2: Ability to apply suitable programming paradigm for the application.</p> <p>CO3: Ability to compare the features of various programming languages.</p> <p>CO4: Able to understand the programming paradigms of modern programming languages.</p> <p>CO5: Able to understand the concepts of ADT and OOP.</p> <p>CO6: Ability to program in different language paradigms and evaluate their relative benefits.</p>
Professional Elective – II Python Programming	<p>At the end of this course, each student should be able to:</p> <p>CO1: Examine Python syntax and semantics and be fluent in the use of Python flow control and functions.</p> <p>CO2: Demonstrate proficiency in handling Strings and File Systems.</p> <p>CO3: Create, run and manipulate Python Programs using core data structures like Lists, Dictionaries and use Regular Expressions.</p> <p>CO4: Interpret the concepts of Object-Oriented Programming as used in Python.</p> <p>CO5: Implement exemplary applications related to Network Programming, Web Services and Databases in Python.</p>


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Professional Elective– II Mobile Application Development	<p>At the end of this course, each student should be able to:</p> <p>CO1: Describe Android platform, Architecture and features.</p> <p>CO2: Design User Interface and develop activity for Android App.</p> <p>CO3: Use Intent , Broadcast receivers and Internet services in Android App.</p> <p>CO4: Design and implement Database Application and Content providers.</p> <p>CO5: Use multimedia, camera and Location based services in Android App.</p> <p>CO6: Discuss various security issues in Android Platform.</p>
Professional Elective– II Web Scripting Languages	<p>At the end of this course, each student should be able to:</p> <p>CO1: Comprehend the differences between typical scripting languages and typical system and application programming languages.</p> <p>CO2: Gain knowledge of the strengths and weakness of Perl, TCL and Ruby; and select an appropriate language for solving a given problem.</p> <p>CO3: Acquire programming skills in scripting language.</p>
Professional Elective– II Internet of Things	<p>At the end of this course, each student should be able to:</p> <p>CO1: Interpret the impact and challenges posed by IoT networks leading to new architectural models.</p> <p>CO2: Compare and contrast the deployment of smart objects and the technologies to connect them to network.</p> <p>CO3: Appraise the role of IoT protocols for efficient network communication.</p> <p>CO4: Elaborate the need for Data Analytics and Security in IoT.</p> <p>CO5: Illustrate different sensor technologies for sensing real world entities and identify the applications of IoT in Industry.</p>



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Professional Elective-III Graph Theory	At the end of this course, each student should be able to: CO1: Know some important classes of graph theoretic problems; CO2: Be able to formulate and prove central theorems about trees, matching, connectivity, colouring and planar graphs; CO3: Be able to describe and apply some basic algorithms for graphs; CO4: Be able to use graph theory as a modelling tool.
Professional Elective-III Distributed Systems	At the end of this course, each student should be able to: CO1: Able to comprehend and design a new distributed system with the desired features. CO2: Able to start literature survey leading to further research in any subarea. CO3: Able to develop new distributed applications.
Professional Elective-III Machine Learning	At the end of this course, each student should be able to: CO1: Understand the concepts of computational intelligence like machine learning CO2: Ability to get the skill to apply machine learning techniques to address the real time problems in different areas CO3: Understand the Neural Networks and its usage in machine learning application.
Professional Elective-III Software Process and Project Management	At the end of this course, each student should be able to: CO1: Gain knowledge of software economics, phases in the life cycle of software development, project organization, project control and process instrumentation CO2: Analyze the major and minor milestones, artifacts and metrics from management and technical perspective CO3: Design and develop software product using conventional and modern principles of software project management
Professional Elective-IV Computational Complexity	At the end of this course, each student should be able to: CO1: Ability to classify decision problems into appropriate complexity classes


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	<p>CO2: Ability to specify what it means to reduce one problem to another, and construct reductions for simple examples.</p> <p>CO3: Ability to classify optimization problems into appropriate approximation complexity classes</p> <p>CO4: Ability to choose appropriate data structure for the given problem</p> <p>CO5: Ability to choose and apply appropriate design method for the given problem</p>
<p>Professional Elective-IV Cloud Computing</p>	<p>At the end of this course, each student should be able to:</p> <p>CO1: Ability to understand various service delivery models of a cloud computing architecture.</p> <p>CO2: Ability to understand the ways in which the cloud can be programmed and deployed.</p> <p>CO3: Understanding cloud service providers.</p>
<p>Professional Elective-IV Blockchain Technology</p>	<p>At the end of this course, each student should be able to:</p> <p>Learn about research advances related to one of the most popular technological areas today</p>
<p>Professional Elective-IV Social Network Analysis</p>	<p>At the end of this course, each student should be able to:</p> <p>CO1: Develop semantic web related applications.</p> <p>CO2: Represent knowledge using ontology.</p> <p>CO3: Predict human behaviour in social web and related communities.</p> <p>CO4: Visualize social networks</p>
<p>Data Mining Lab</p>	<p>At the end of this course, each student should be able to:</p> <p>CO1: Ability to add mining algorithms as a component to the existing tools</p> <p>CO2: Ability to apply mining techniques for realistic data.</p>
<p>Professional Elective -II Python Programming Lab</p>	<p>At the end of this course, each student should be able to:</p> <p>CO1: Student should be able to understand the basic concepts scripting and the contributions of scripting language</p> <p>CO2: Ability to explore python especially the object oriented concepts, and the built in objects of Python.</p> <p>CO3: Ability to create practical and contemporary</p>

	applications such as TCP/IP network programming, Web applications, discrete event simulations
Professional Elective -II Mobile Application Development Lab	<p>At the end of this course, each student should be able to:</p> <p>CO1: Demonstrate the android features and create ,develop using android.</p> <p>CO2: Demonstrate and Understanding anatomy of anAndroid application</p> <p>CO3: Apply the android geo location based services.</p> <p>CO4: Illustrate the android wifi features and advanceandroid development.</p> <p>CO5: Demonstrate the linux security and implement ADL interface</p>
Professional Elective -II Web Scripting Languages Lab	<p>At the end of this course, each student should be able to:</p> <p>CO1: Ability to understand the differences between Scripting languages and programming languages</p> <p>CO2: Able to gain some fluency programming in Ruby, Perl, TCL.</p>
Professional Elective -II Internet of Things Lab	<p>At the end of this course, each student should be able to:</p> <p>CO1: Investigate a variety of emerging devices and technologies such as smart sensing, pervasiveconnectivity, virtual interfaces & ubiquitous computing and their potential applications inconsumer, retail, healthcare and industrial contexts</p> <p>CO2: Collaborate on research with industry partners toaddress significant and complex challenges surrounding IoT technologies and applications</p> <p>CO3: This may be used as a platform for conductingconsultancy work required by government/Private organizations in around Coimbatore.</p> <p>CO4: Enable faculty learning, research and hands-on experimentation to discover and demonstrate thepromise of the Internet of Things.</p> <p>CO5: Provide students unique interdisciplinary learning and innovation experiences with IoTtechnologies.</p>


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CS705PC	Industry Oriented Mini Project	At the end of this course, each student should be able to: CO1: Formulate a real world problem and develop its requirements CO2: Student will be exposed to industrial awareness CO3: Self learning technologies, methods and/or techniques that contribute to the software solution of the project.
CS706PC	Seminar	At the end of this course, each student should be able to: CO1: Ability to work in actual working environment. CO2: Ability to utilize technical resources CO3: Ability to write technical documents and give oral presentations related to the work completed.

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Course Title / Name	Course Outcomes
Open Elective – III	
Professional Elective – V Information Theory & Coding	At the end of this course, each student should be able to: CO1: Learn measurement of information and errors. CO2: Obtain knowledge in designing various sourcecodes and channel codes. CO3: Design encoders and decoders for block and cyclic codes. CO4: Understand the significance of codes in various applications.



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Professional Elective – V Real-Time Systems	<p>At the end of this course, each student should be able to:</p> <p>CO1: Be able to explain real-time concepts such as preemptive multitasking, task priorities.</p> <p>CO2: Priority inversions, mutual exclusion, context switching, and synchronization, interrupt.</p> <p>CO3: Latency and response time, and semaphores.</p> <p>CO4: Able to describe how a real-time operating system kernel is implemented.</p> <p>CO5: Able to explain how tasks are managed.</p> <p>CO6: Explain how the real-time operating system implements time management.</p> <p>CO7: Discuss how tasks can communicate using semaphores, mailboxes, and queues.</p> <p>CO8: Be able to implement a real-time system on an embedded processor.</p> <p>CO9: Be able to work with real-time operating systems like RT Linux, Vx Works, MicroC /OSII, Tiny OS.</p>
Professional Elective – V Data Analytics	<p>At the end of this course, each student should be able to:</p> <p>CO1: After completion of this course students will be able to Understand the impact of data analytics for business decisions and strategy.</p> <p>CO2: Carry out data analysis/statistical analysis</p> <p>CO3: To carry out standard data visualization and formal inference procedures.</p>
	<p>CO4: Design Data Architecture.</p> <p>CO5: Understand various Data Sources.</p>
Professional Elective – V Modern Software Engineering	<p>At the end of this course, each student should be able to:</p> <p>CO1: Basic knowledge and understanding of the analysis and design of complex systems.</p> <p>CO2: Ability to apply software engineering principles and techniques.</p>
Professional Elective -VI Advanced Algorithms	<p>At the end of this course, each student should be able to:</p> <p>CO1: Ability to analyze the performance of algorithms.</p> <p>CO2: Ability to choose appropriate data structures and algorithm design methods for a specified application.</p> <p>CO3: Ability to understand how the choice of data structures and the algorithm design methods impact the performance of programs.</p>

Professional Elective -VI Web Services and Service Oriented Architecture	At the end of this course, each student should be able to: CO1: Basic details of WSDL, UDDI, SOAP CO2: Implement WS client and server with interoperable systems
Professional Elective -VI Computer Forensics	At the end of this course, each student should be able to: CO1: Students will understand the usage of computers in forensic, and how to use various forensic tools for a wide variety of investigations. CO2: It gives an opportunity to students to continue their zeal in research in computer forensics
Professional Elective -VI Neural Networks and Deep Learning	At the end of this course, each student should be able to: CO1: Ability to understand the concepts of Neural Networks. CO2: Ability to select the Learning Networks in modeling real world systems CO3: Ability to use an efficient algorithm for Deep Models. CO4: Ability to apply optimization strategies for large scale applications.
Major Project	At the end of this course, each student should be able to: CO1: Ability to implement and execute well defined objective CO2: Ability to work in team at component level and system level CO3: Ability to troubleshoot.


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VAAGESWARI COLLEGE OF ENGINEERING

Beside LMD Police Station, Ramakrishna Colony,
KARIMNAGAR, Telangana state – 505 527
Affiliated to Jawaharlal Nehru Technological University Hyderabad,
Approved by AICTE New Delhi

MASTER OF BUSINESS ADMINISTRATION

COURSE OUTCOMES (COs)

Master of Business Administration I Year I Sem R22 Regulation

Course Title / Name	Course Outcomes
Management and Organizational Behaviour	<p>At the end of this course, each student should be able to:</p> <p>CO1: Evolution of Management and contribution of Management thinkers</p> <p>CO2: The relevance of environmental scanning, planning and to take decisions,</p> <p>CO3: Organizing and controlling</p> <p>CO4: Individual and group behaviour</p> <p>CO5: Leadership and Motivation.</p>
Business Economics	<p>At the end of this course, each student should be able to:</p> <p>CO1: Economic Principles in Business</p> <p>CO2: Forecast Demand and Supply</p> <p>CO3: Production and Cost Estimates</p> <p>CO4: Market Structure and Pricing Practices</p>
Financial Accounting & Analysis	<p>At the end of this course, each student should be able to:</p> <p>CO1: Principles of Accounting, Accounting Process</p> <p>CO2: Inventory Valuation</p> <p>CO3: Preparation, Analysis and Interpretation of Financial Statements.</p>
Research Methodology and Statistical Analysis	<p>At the end of this course, each student should be able to:</p> <p>CO1: Conceptual overview of Research</p> <p>CO2: To apply, analyze various simple & advanced statistical tools</p>

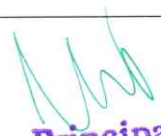

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	CO3: To apply the principles of research methodology for various projects.
Legal and Business Environment	At the end of this course, each student should be able to: CO1: Business Laws related to incorporating a company CO2: Law of contract and Negotiable Instruments CO3: Regulatory framework in India.
Business Ethics and Corporate Governance	At the end of this course, each student should be able to: CO1: Need for Business Ethics and Corporate Governance in India CO2: Codes and Committees in Corporate Governance CO3: Role of Board in Corporate Governance CO4: Stakeholder perspective of Corporate Governance
Project Management	At the end of this course, each student should be able to: CO1: Importance of Project Management CO1: Project Planning, Execution and implementation CO1: Significance of teams in projects CO1: Project evaluation techniques.
Technology Management	At the end of this course, each student should be able to: CO1: Importance of Technological Innovation CO2: Importance of Research and development in technology management CO3: Forecasting of Technology
Cross Cultural Management	At the end of this course, each student should be able to: CO1: Importance of culture CO2: Values CO3: Culture and styles of Management CO4: Communication in different cultures CO5: Cross cultural team management.
Business Communication Lab.	At the end of this course, each student should be able to:

	CO1: The importance of Communication in Business CO2: To develop writing skills and presentation CO3: Writing business proposals and letters CO4: Application of business communication in the self-development process.
Statistical Data Analysis Lab	At the end of this course, each student should be able to: CO1: Analyse and apply the statistical tools for decision making CO2: Hypotheses Testing CO3: Discussion of Results for better decision making.

Master Of Business Administration I Year II Sem R22 Regulation

Course Title / Name	Course Outcomes
Human Resource Management	At the end of this course, each student should be able to: CO1: HR concepts CO2: Process of recruitment and selection, CO3: Learning and development CO4: Performance Management and Compensation CO5: Employee retention strategies CO6: Employee welfare and grievances.
Marketing Management	At the end of this course, each student should be able to: CO1: Concepts of marketing management CO2: To analyze markets and design customer driven strategies CO3: To communicate the decisions towards business development with superior customer value.
Financial Management	At the end of this course, each student should be able to: CO1: Goals of financial function CO2: Investment criteria and decision process CO3: Capital structure and Dividend Decisions CO4: Asset Liability management



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Quantitative Analysis for Business Decisions	<p>At the end of this course, each student should be able to:</p> <p>CO1: The course covers origin and application of OR.</p> <p>CO2: Linear Programming Method,</p> <p>CO3: Decision Theory and queuing theory. These concepts help the student in taking decisions for business.</p>
Entrepreneurship	<p>At the end of this course, each student should be able to:</p> <p>CO1: Mindset of the entrepreneurs,</p> <p>CO2: Identify ventures for launching,</p> <p>CO3: Develop an idea on the legal framework and</p> <p>CO4: Strategic perspectives in entrepreneurship.</p>
Logistics & Supply Chain Management	<p>At the end of this course, each student should be able to:</p> <p>CO1: Growing importance of Logistics and Supply Chain Management</p> <p>CO2: LSCM Costs and Performance</p> <p>CO3: Benchmarking in SCM</p> <p>CO4: Sourcing and transportation</p> <p>CO5: Global aspects in SCM</p>
Total Quality Management	<p>At the end of this course, each student should be able to:</p> <p>CO1: Importance of Quality</p> <p>CO2: Principles and Practices of TQM</p> <p>CO3: Tools and techniques in Quality management.</p>
Marketing Research	<p>At the end of this course, each student should be able to:</p> <p>CO1: Importance of Marketing Research</p> <p>CO2: Research design</p> <p>CO3: Scaling and sampling methodology</p> <p>CO4: Data presentation</p>
International Business	<p>At the end of this course, each student should be able to:</p> <p>CO1: Importance of International Business</p> <p>CO2: International Trade theories</p> <p>CO3: International Economic environment</p> <p>CO4: Strategic and operational issues of IB</p>

Rural Marketing	At the end of this course, each student should be able to: CO1: Rural Marketing opportunities CO2: Rural Economy and Environment CO3: Social and cultural aspects in rural India CO4: Innovations in rural marketing.
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Master of Business Administration II Year I & II Sem R22 Regulation

Course Title / Name	Course Outcomes
Summer Internship	At the end of this course, each student should be able to: CO1: Management functions and Organizational structure CO2: Organizational dynamics in terms of organizational behaviour, culture, climate CO3: Functional domain knowledge CO4: Processes and systems CO5: External and Internal environment impact on the organization.
Production And Operations Management	At the end of this course, each student should be able to: CO1: Concepts of Operations management, CO2: Product & process design, analysis, CO3: Plant location and layout, CO4: Scheduling and Material Management.
Management Information System	At the end of this course, each student should be able to: CO1: Concepts & applications of Management Information Systems CO2: Information Systems Planning & Implementations CO3: Cyber crime and information security.
Data Analytics	At the end of this course, each student should be able to: CO1: Importance of Analytics CO2: Understanding the analytical tools CO3: Application of Analytical tools to solve business problems.


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Strategic Management	<p>At the end of this course, each student should be able to:</p> <p>CO1: Strategic management concepts</p> <p>CO2: Tools and Techniques for Strategic analysis</p> <p>CO3: Strategies for competing in globalised markets</p> <p>CO4: Strategy Evaluation and Control.</p>
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PRINCIPAL

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