



R.M.K. ENGINEERING COLLEGE

(An Autonomous Institution)

RSM Nagar, Kavaraipeitai – 601 206

DEPARTMENT OF MECHANICAL ENGINEERING

COURSE OUTCOMES: ODD Semester 2026-27



List of Courses

S. No.	Regulation	Semester	Category of Courses	Course Code / Course Name
1.	R2024 (Students admitted during 2025-26)	3	Theory	24GE301 - Universal Human Values 2: Understanding Harmony
2.		3	Theory	24MA304 - Fourier Analysis and Partial Differential Equations
3.		3	Theory	24ME301 - Engineering Thermodynamics
4.		3	Theory with Lab Component	24ME302R - Applied Mechanics and Strength of Materials
5.		3	Theory with Lab Component	24IT301 - Data Structures and Algorithms
6.		3	Practical	24ME311R - Product Development Lab – 1 (Design Thinking Phase)
7.		3	Employability Enhancement Courses	24CS311R - Aptitude and Coding Skills - I
8.		3	Employability Enhancement Courses	24ME312 - Internship/Seminar (1 Week)
9.		3	Audit Course	24MC301 - Indian Constitution (Non-Credit)
10.	R2024 (Students admitted during 2024-25)	5	Theory	24ME501-Design of Machine Elements
11.		5	Theory	24ME903- Engineering Metrology and Machine Drawing (Professional Elective – II)
12.		5	Theory	24ME905- Automotive Technology (Professional Elective III)
13.		5	Theory with Lab Component	24ME502- Basics of Product Lifecycle Management
14.		5	Theory with Lab Component	24ME503-Fluid Mechanics and Machinery
15.		5	Theory with Lab Component	24ME504- Heat and Mass Transfer (Lab
16.		5	Practical	24ME511-Product Development Lab – 3 (Simulation and Analysis Phase)
17.		5	Practical	24HS511-Professional Communication – I (TOEFL)
18.		5	Practical	24CS511-Advanced Aptitude and Coding Skills - I
19.		5	Employability Enhancement Courses	24ME511-Internship

S. No.	Regulation	Semester	Category of Courses	Course Code / Course Name
20.	R2022 (Students admitted during 2023-24)	7	Theory	22CE701 - Professional Ethics in Engineering
21.		7	Theory	22ME921 - Entrepreneurship Development (Professional Elective VI)
22.		7	Theory	22EC006 - Robotic Systems (Open Elective III)
23.		7	Theory	22CE916 - Air Pollution and Control Engineering (Open Elective IV)
24.		7	Theory with Lab Component	22ME701 - Finite Element Analysis
25.		7	Theory with Lab Component	22ME702 - Industrial Automation and IoT
26.		7	Employability Enhancement Courses	22ME711 – Comprehension

COURSE OUTCOMES

SECOND YEAR - SEMESTER: 03

REGULATION: 2024 (Admitted in 2025-26)

Semester: III Course Name: 24GE301 - Universal Human Values 2: Understanding Harmony

Upon the completion of this course the students will be able to

S. No.	Course Outcomes	COs
C201.1	Develop self-awareness and a deeper understanding of their surroundings, including family, society, and nature.	CO1
C201.2	Identify and resolve inner conflicts based on natural acceptance.	CO2
C201.3	Become more responsible towards life, and handle problems with sustainable solutions by considering human relationships and natural harmony.	CO3
C201.4	Enhance their critical thinking and analyzing skills.	CO4
C201.5	Develop a stronger commitment towards human values, relationships, and societal well-being.	CO5
C201.6	Apply what they have learnt in different day-to-day settings in real life, and take the initial steps towards integrating these values into daily life.	CO6

Semester: III Course Name: 24MA304 - Fourier Analysis and Partial Differential Equations

Upon the completion of this course the students will be able to

S. No.	Course Outcomes	COs
C202.1	Obtain the Fourier series of periodic functions.	CO1
C202.2	Analyze the harmonics using Fourier series.	CO2
C202.3	Compute the Fourier transform of prescribed functions.	CO3
C202.4	Solve first order partial differential equations.	CO4
C202.5	Solve higher order partial differential equations.	CO5
C202.6	Apply the concept of Fourier series to solve wave and heat equations	CO6

Semester: III Course Name: 24ME301 – Engineering Thermodynamics

S. No.	Course Outcomes	COs
C203.1	Explain fundamental thermodynamic concepts and the First Law of Thermodynamics	CO1
C203.2	Apply the Second Law of Thermodynamics to evaluate the performance of heat engines, refrigerators, and heat pumps.	CO2
C203.3	Analyze thermodynamic properties of pure substances and apply First and Second Laws to steam-based power cycles.	CO3
C203.4	Evaluate the performance of gas power cycles such as Otto, Diesel, and Dual cycles and gas turbines.	CO4
C203.5	Describe the working and performance of air compressors and internal combustion engines.	CO5
C203.6	Solve engineering problems involving thermodynamic systems by applying thermodynamic laws, property relations, and cycle analysis techniques using diagrams, charts, and tables.	CO6

**Semester: III Course Name: 24ME302R - Applied Mechanics and Strength of Materials
(Theory with Lab Component)**

S. No.	Course Outcomes	COs
C204.1	Analyze forces and equilibrium in mechanical systems.	CO1
C204.2	Determine centroids, center of mass, and moments of inertia for various shapes and sections.	CO2
C204.3	Estimate the stresses, strains and deformations in solids under axial loading.	CO3
C204.4	Compute the bending and shearing stresses in beams subjected to loadings.	CO4
C204.5	Analyze the effect of torsion in shafts and springs, and compute stresses in thin cylinders.	CO5
C204.6	Calculate the stresses and deformation of solids subjected to various loads.	CO6

**Semester: III Course Name: 24IT301 - Data Structures and Algorithms
(Theory with Lab Component)**

S. No.	Course Outcomes	COs
C205.1	Understand algorithm design techniques, recursion, asymptotic notations, and performance analysis for evaluating computational efficiency.	CO1
C205.2	Apply linear data structures such as arrays, stacks, queues, and linked lists to solve computational problems effectively.	CO2
C205.3	Implement and analyze non-linear data structures including binary trees, binary search trees, and AVL trees.	CO3
C205.4	Demonstrate graph representations and traversal algorithms such as Breadth First Search (BFS) and Depth First Search (DFS) for problem solving.	CO4
C205.5	Analyze and apply searching and sorting algorithms in real-world scenarios.	CO5
C205.6	Design and evaluate efficient solutions to the real-world problems by selecting appropriate data structures and algorithms based on time and space complexity trade-offs.	CO6

**Semester: III Course Name: 24ME311R - Product Development Lab – 1
(Functional design Phase)**

S. No.	Course Outcomes	COs
C206.1	Develop the ability to critically read the research writing of others.	CO1
C206.2	Evaluate the rational, empirical, and methodological strengths and weaknesses of different studies.	CO2
C206.3	Identify research gaps that can be operationalized into feasible research questions.	CO3
C206.4	Develop clear and focused research or design problem statements derived from the identified gaps.	CO4
C206.5	Analyze critically the design process and outcomes to identify areas for improvement and future research directions.	CO5

Semester: III Course Name: 24CS311R - Aptitude and Coding Skills – I

S. No.	Course Outcomes	COs
C207.1	Develop vocabulary for effective communication skills.	CO1
C207.2	Build the logical reasoning and enhance critical thinking.	CO2
C207.3	Develop error correction and debugging skills in programming.	CO3
C207.4	Apply programming skills to develop programs efficiently.	CO4
C207.5	Solve problems using quantitative skills.	CO5
C207.6	Develop effective reading and listening skills.	CO6

Semester: III

Course Name: 24ME312 - Internship/Seminar (1 Week)

S. No.	Course Outcomes	COs
C208.1	Demonstrate Professional and Ethical Responsibility.	CO1
C208.2	Understand the Global, Economic, Environmental, and Societal Impact of Engineering Solutions.	CO2
C208.3	Cultivate Research Skills and Lifelong Learning Abilities.	CO3
C208.4	Identify career paths based on individual abilities and create a report detailing work experience in the industry.	CO4
C208.5	Develop personal confidence to tackle diverse engineering tasks	CO5

Semester: III

Course Name: 24MC301 - Indian Constitution

S. No.	Course Outcomes	COs
C209.1	Discuss the constitution and fundamentals rights of India	CO1
C209.2	Explain the various structure and functions of central government.	CO2
C209.3	Illustrate the various structure and functions of State government.	CO3
C209.4	Describe the various constitution functions in India.	CO4
C209.5	Understand the various Indian social structures.	CO5
C209.6	Summarize the important of various right about women and children.	CO6

COURSE OUTCOMES
THIRD YEAR - SEMESTER: 05
REGULATION: 2024 (Admitted in 2024-25)

Semester: V Course Name: 24ME501 - Design of Machine Elements

S. No.	Course Outcomes	COs
C301.1	Compute stress acting on various machine elements.	CO1
C301.2	Determine the dimensions, stress requirements of shaft and couplings based on various load conditions	CO2
C301.3	Select appropriate bearings from the standard catalog for varied applications.	CO3
C301.4	Design the dimensions of the energy storing devices for specific applications.	CO4
C301.5	Summarize the temporary and permanent joints based on application requirements.	CO5
C301.6	Apply the various design concepts on to real-time product applications.	CO6

Semester: V Course Name: 24ME903- Engineering Metrology and Machine Drawing (Professional Elective-II)

S. No.	Course Outcomes	COs
C302.1	Interpret the basic principles of measurement systems and engineering drawing standards (BIS/ISO).	CO1
C302.2	Apply linear and angular measurement techniques and calculate limits, fits, and tolerances for engineering components.	CO2
C302.3	Analyze surface finish and form deviations (threads/gears) based on theoretical principles of metrology.	CO3
C302.4	Evaluate modern metrology tools such as CMM, Machine Vision, and IoT-enabled systems for quality control applications.	CO4
C302.5	Construct detailed assembly drawings for machine components, incorporating Bill of Materials and standard conventions.	CO5
C302.6	Select suitable measuring instruments and drafting techniques to ensure component interchangeability and compliance with design specifications.	CO6

Semester: V**Course Name: 24ME905 – Automotive Technology
(Professional Elective-III)**

S. No.	Course Outcomes	COs
C303.1	Classify automobile structures and explain the working principles of IC engine components.	CO1
C303.2	Analyze the operation of electronic engine management systems and emission control techniques.	CO2
C303.3	Compare the construction and working of manual, automatic, and CVT transmission systems.	CO3
C303.4	Evaluate the performance of steering, suspension, and braking systems including modern active safety features.	CO4
C303.5	Discuss the feasibility and performance of alternative fuels and electric propulsion systems.	CO5
C303.6	Elaborate on the role of data networking, ADAS, and IoT in the development of autonomous vehicles.	CO6

Semester: V Course Name: 24ME502 - Basics of Product Lifecycle Management

S. No.	Course Outcomes	COs
C304.1	Explain the installation and maintenance procedure of software related to PLM.	CO1
C304.2	Understand the PLM and PDM functions in executing the task of enterprise.	CO2
C304.3	Demonstrate workflow, Project and search in PLM environment.	CO3
C304.4	Describe the case studies in detail.	CO4
C304.5	Discuss the PLM software interface.	CO5
C304.6	Illustrate design file integration with PLM software.	CO6

Semester: V Course Name: 24ME503 - Fluid Mechanics and Machinery

S. No.	Course Outcomes	COs
C305.1	Analyze the difference between solid and fluid, its properties and behaviour in static conditions.	CO1
C305.2	Apply Bernoulli's equation for flow measurement like Orifice/ Venturi meter.	CO2
C305.3	Illustrate various losses in pipelines when pipes connected in series and parallel.	CO3
C305.4	Analyze the performance characteristics of Turbines.	CO4
C305.5	Interpret different pumps and draw the characteristic curves of pumps.	CO5
C305.6	Analyze and select the appropriate hydraulic turbines, pumps and components for suitable applications.	CO6

Semester: V Course Name: 24ME504 – Heat and Mass Transfer

S. No.	Course Outcomes	COs
C306.1	Describe the principles of steady and unsteady heat conduction in plane, cylindrical, and spherical systems.	CO1
C306.2	Analyze forced and free convection heat transfer in external and internal flows by applying boundary layer concepts and empirical correlations.	CO2
C306.3	Analyze phase change heat transfer processes such as boiling and condensation and evaluate the performance of heat exchangers.	CO3
C306.4	Discuss the fundamental laws of thermal radiation and apply radiation heat transfer concepts.	CO4
C306.5	Apply the principles of diffusion and convective mass transfer, mass transfer correlations, to solve engineering problems.	CO5
C306.6	Demonstrate the conduction and convection principles in product application by real time study.	CO6

**Semester: V Course Name: 24ME511 - Product Development Lab – 3
(Simulation and Analysis Phase)**

S. No.	Course Outcomes	COs
C307.1	Analyze critically the design process and outcomes to identify areas for improvement and future research directions.	CO1
C307.2	Develop preliminary prototypes or models to demonstrate design concepts and evaluate their effectiveness.	CO2
C307.3	Conduct iterative testing and evaluation of designs, incorporating feedback to improve outcomes.	CO3
C307.4	Apply industry-standard tools, technologies, and frameworks to execute the design process effectively.	CO4
C307.5	Explain design concepts through well-structured oral presentations, reports, and visual aids tailored to diverse audiences.	CO5

Semester: V Course Name: 24HS511 - Professional Communication - I (TOEFL)

S. No.	Course Outcomes	COs
C308.1	Apply TOEFL reading strategies (skimming, scanning, inference, vocabulary recognition) to answer academic reading questions with appropriate accuracy under test conditions.	CO1
C308.2	Produce TOEFL-style integrated and independent essays that meet task requirements, demonstrating coherence, grammatical accuracy, and academic vocabulary within the allotted time.	CO2
C308.3	Identify the main ideas, supporting details, and the speaker's attitudes in TOEFL-type academic listening passages, and respond correctly to comprehension questions.	CO3
C308.4	Deliver organized spoken responses to TOEFL speaking prompts with intelligible pronunciation, adequate fluency, and relevant content within the prescribed time.	CO4
C308.5	Complete TOEFL integrated tasks by synthesizing information from reading and listening inputs into coherent spoken or written responses using appropriate time-management strategies.	CO5

Semester: V Course Name: 24CS511 - Advanced Aptitude and Coding Skills - I

S. No.	Course Outcomes	COs
C309.1	Develop vocabulary for effective communication and reading skills.	CO1
C309.2	Build the logical reasoning and quantitative skills.	CO2
C309.3	Develop error correction and debugging skills in programming.	CO3

Semester: V Course Name: 24ME512-Internship

S. No.	Course Outcomes	COs
C310.1	Demonstrate professional ethics, responsibility, and integrity in engineering practice.	CO1
C310.2	Analyze the global, economic, environmental, and societal impacts of Engineering solutions.	CO2
C310.3	Develop research aptitude and engage in lifelong learning for continuous professional growth.	CO3
C310.4	Explore suitable career paths based on individual strengths and document industry experience through a structured report.	CO4
C310.5	Build confidence to effectively handle diverse engineering tasks and challenges.	CO5

COURSE OUTCOMES
FOURTH YEAR - SEMESTER: 07
REGULATION: 2022 (2023-24)

Semester: VII Course Name: 22CE701 - Professional Ethics in Engineering

S. No.	Course Outcomes	COs
C401.1	Summarize the importance of human values in workplace.	CO1
C401.2	Discuss the senses of engineering ethics, moral dilemmas, moral autonomy and uses of ethical theories.	CO2
C401.3	Describe the role of engineers as responsible experimenters and necessity of codes of ethics in engineering.	CO3
C401.4	Explain safety, risk, responsibilities and rights in the society.	CO4
C401.5	Analyze the global issues related to environmental ethics, computer ethics, weapons development and the role of engineers as expert witnesses and advisors.	CO5
C401.6	Apply ethics in society and discuss ethical issues related to engineering.	CO6

**Semester: VII Course Name: 22ME921 - Entrepreneurship Development
 (Professional Elective VI)**

S. No.	Course Outcomes	COs
C402.1	Understand the role of entrepreneur in economic growth of the nation.	CO1
C402.2	Explain the major motivation factors for becoming an entrepreneur.	CO2
C402.3	Classify, compare and analyze for setting up of a good business opportunity.	CO3
C402.4	Categorize the various sources of finance and method of accounting.	CO4
C402.5	Develop the business opportunity with the knowledge on Government taxation norms.	CO5
C402.6	Apply the knowledge for expanding business.	CO6

Semester: VII Course Name: 22EC006 - Robotic Systems (Open Elective III)

S. No.	Course Outcomes	COs
C403.1	Understand the basic concepts of a robot.	CO1
C403.2	Explain the use of various types of End Effectors.	CO2
C403.3	Explain the use of Various types of Sensors.	CO3
C403.4	Explain the Concepts of Robot Kinematics.	CO4
C403.5	Demonstrate the Robot Programming.	CO5
C403.6	Understand the Robot safety issues and economics.	CO6

**Semester: VII Course Name: 22CE916 - Air Pollution and Control Engineering
(Open Elective IV)**

S. No.	Course Outcomes	COs
C404.1	Summarize the nature and characteristics of air pollutants, noise pollution and basic concepts of air quality management.	CO1
C404.2	Identify, formulate and solve air pollution problems.	CO2
C404.3	Design stacks and particulate air pollution control devices to meet applicable standards.	CO3
C404.4	Select control equipment for gaseous contaminants.	CO4
C404.5	Ensure air quality control and preventive measures for air pollution.	CO5
C404.6	Apply all quality management measures in the real-time applications.	CO6

**Semester: VII Course Name: 22ME701 - Finite Element Analysis
(Theory with Lab Component)**

S. No.	Course Outcomes	COs
C405.1	Summarize the basics of finite element formulation using mathematical models of Boundary Value Problems.	CO1
C405.2	Apply finite element formulations to solve one-dimensional Problems.	CO2
C405.3	Discuss the finite element formulations to solve two-dimensional scalar Problems.	CO3
C405.4	Estimate the element matrices and vectors to solve two-dimensional Vector Problems.	CO4
C405.5	Explain the need for Isoperimetric transformation and the use of numerical integration.	CO5
C405.6	Compute real time primitive structural and thermal problems using finite element techniques.	CO6

Semester: VII Course Name: 22ME702 - Industrial Automation and IoT
(Theory with Lab Component)

S. No.	Course Outcomes	COs
C406.1	Identify key components and functions of industrial automation systems and IoT technologies.	CO1
C406.2	Recognize various types of sensors and actuators and their applications in industrial automation and IoT.	CO2
C406.3	Explain the PLC-based automation solutions and analyze the functionalities and capabilities of IoT platforms.	CO3
C406.4	Evaluate industrial communication protocols such as Modbus, MQTT, and CoAP for seamless data exchange in IoT-based automation systems.	CO4
C406.5	Investigate and apply IoT solutions in healthcare, power plants, Agriculture, inventory management, and quality control.	CO5
C406.6	Apply theoretical knowledge to real-world scenarios and demonstrate problem solving abilities in Industrial Automation and IoT contexts.	CO6

Semester: VII Course Name: 22ME711 – Comprehension

S. No.	Course Outcomes	COs
C407.1	Apply the knowledge gained in the previous semesters to solve the problems.	CO1
C407.2	Gain knowledge about the recent technological advancements.	CO2
C407.3	Develop lifelong learning abilities and improve the research skills.	CO3
C407.4	Identify career paths based on individual abilities.	CO4
C407.5	Build self-assurance to handle a variety of engineering tasks.	CO5



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COURSE OUTCOMES: EVEN Semester 2026-27



S. No.	Regulation	Semester	Category of Courses	Course Code / Course Name
1.	R2024 (Students admitted during the academic year 2025-26)	4	Theory	24ME901 - Engineering Materials and Metallurgy (Professional Elective – I)
2.		4	Theory with Lab Component	24MA401 - Probability and Statistics
3.		4	Theory with Lab Component	24ME401 - Applied Thermal Engineering
4.		4	Theory with Lab Component	24ME402 - Manufacturing Processes
5.		4	Theory with Lab Component	24ME403 - Mechanics of Machines
6.		4	Theory with Lab Component	24IT402 - Web Development Frameworks
7.		4	Practical	24ME411R - Product Development Lab - 2 (Analysis and Prototype Phase)
8.		4	Employability Enhancement Courses	24CS411R - Aptitude and Coding Skills - II
9.	R2024 (Students admitted during the academic year 2024-25)	6	Theory	24ME601-Design of Transmission Systems
10.		6	Theory	(Professional Elective-IV)
11.		6	Theory	(Open Elective-II)
12.		6	Theory with Lab Component	24ME602-Digital Manufacturing
13.		6	Theory with Lab Component	24ME603-Advanced Product Lifecycle Management
14.		6	Theory with Lab Component	24CS604-Design Thinking
15.		6	Theory with Lab Component	24ME611-Product Development Lab – 4 (Prototype and Validation Phase)
16.		6	Practical	24HS611 - Professional Communication - II (TOEFL)
17.		6	Employability Enhancement Courses	24CS611- Advanced Aptitude and Coding Skills II
18.	R2022 (Students admitted during 2023-24)	8	Employability Enhancement Courses	22ME811 - Project work

COURSE OUTCOMES
SECOND YEAR - SEMESTER: 04
REGULATION – 2024 (2025-26)

Semester: IV Course Name: 24ME901 - Engineering Materials and Metallurgy
(Professional Elective – I)

S. No.	Course Outcomes	COs
C210.1	Understand the liquid –Solid transformational, Comprehensive understanding on Fe-Fe ₃ C Phase diagram.	CO1
C210.2	Explain various heat treatment processes applicable to ferrous and non-ferrous alloys.	CO2
C210.3	Select suitable ferrous and non-ferrous materials for various engineering applications based on their properties.	CO3
C210.14	Understand and evaluate the types, properties, and engineering applications of polymers, ceramics, and composites.	CO4
C210.5	Analyze deformation mechanisms, fracture behavior, and mechanical testing methods including hardness, impact, fatigue, and creep in engineering materials.	CO5
C210.6	Evaluate and apply the properties, applications, and mechanical behavior of metals, polymers, ceramics, and composites in engineering.	

Semester: IV Course Name: 24MA401 - Probability and Statistics

S. No.	Course Outcomes	COs
C211.1	Compute the statistical measures of standard distributions.	CO1
C211.2	Apply joint, marginal and conditional distributions to solve practical Problems.	CO2
C211.3	Determine the correlation and regression for two-dimensional random Variables.	CO3
C211.4	Employ the concept of testing of hypothesis to solve real life problems.	CO4
C211.5	Apply the concept of analysis of variance for various experimental designs.	CO5
C211.6	Prepare the control charts for variables and attributes for analyzing the data.	

Semester: IV Course Name: 24ME401 - Applied Thermal Engineering

S. No.	Course Outcomes	COs
C212.1	Apply nozzle design principles to optimize steam flow in a given system.	CO1
C212.2	Analyze and compute the engine parameters.	CO2
C212.3	Compare the performance of different types of boilers under various operating conditions.	CO3
C212.4	Assess the Performance of steam turbines in power generation.	CO4
C212.5	Calculate the COP of different refrigeration systems. Use psychrometric charts to calculate various properties.	CO5
C212.6	Apply thermal engineering principles to examine the performance of various thermal systems.	CO6

Semester: IV Course Name: 24ME402 - Manufacturing Processes

S. No.	Course Outcomes	COs
C213.1	Describe different manufacturing processes involved in the fabrication of components.	CO1
C213.2	Utilize metal cutting theories for efficient machining and explain the working principles of various lathes.	CO2
C213.3	Illustrate the operation of special-purpose machine tools.	CO3
C213.4	Explain different gear manufacturing techniques and surface finishing processes.	CO4
C213.5	Develop NC codes for machining operations.	CO5
C213.6	Apply manufacturing process concepts to design and create mechanical products or working models.	CO6

Semester: IV Course Name: 24ME403 - Mechanics of Machines

S. No.	Course Outcomes	COs
C214.1	Apply kinematic principles to optimize mechanical systems.	CO1
C214.2	Analyze gear mechanisms and automotive transmissions to address design challenges.	CO2
C214.3	Evaluate surface contacts, friction drives, and cam profiles for mechanical efficiency.	CO3
C214.4	Apply static and dynamic force analysis to solve problems in machine components.	CO4
C214.5	Determine balancing masses and compute vibration frequencies with damping effects.	CO5
C214.6	Evaluate mechanics and vibrations to develop engineering solutions.	CO6

Semester: IV Course Name: 24IT402 - Web Development Frameworks

S. No.	Course Outcomes	COs
C215.1	Understand and apply modern web technologies including HTML5, CSS3, JavaScript, and advanced TypeScript concepts to build dynamic web components.	CO1
C215.2	Develop responsive and modular front-end applications using ReactJS, including component creation, state management, and routing.	CO2
C215.3	Implement advanced React features like hooks (useState, useEffect, useRef), React Router, and REST API integration using Axios for dynamic content handling.	CO3
C215.4	Utilize higher-order components (HOCs), lazy loading, and server-side rendering to optimize and abstract React applications.	CO4
C214.5	Perform unit testing using Jest and RTL, and manage global application state efficiently using Context API and Redux.	CO5
C215.6	Design and deliver scalable and real-world enterprise web applications with complete user interface flow, security, and error handling.	CO6

**Semester: IV Course Name: 24ME411R - Product Development Lab - 2
(Analysis and Prototype Phase)**

S. No.	Course Outcomes	COs
C216.1	Analyze critically the design process and outcomes to identify areas for improvement and future research directions.	CO1
C216.2	Conduct iterative testing and evaluation of designs, incorporating feedback to improve outcomes.	CO2
C216.3	Apply industry-standard tools, technologies, and frameworks to execute the design process effectively.	CO3
C216.4	Classify, compare and analyze business opportunities for a new product.	CO4
C216.5	Summarize and prepare reports for the experimental determinations.	CO5

Semester: IV Course Name: 24CS411R - Aptitude and Coding Skills - II

S. No.	Course Outcomes	COs
C217.1	Develop advanced vocabulary for effective communication skills.	CO1
C217.2	Build an enhanced level of logical reasoning and quantitative skills.	CO2
C217.3	Develop error correction and debugging skills in programming.	CO3
C217.4	Apply data structures and algorithms in problem solving.	CO4
C217.5	Develop advanced vocabulary for effective reading skills.	
C217.6	Apply advanced algorithm design techniques to develop programs.	

COURSE OUTCOMES

THIRD YEAR – SEMESTER: 06

REGULATION – 2024 (2024-25)

Semester VI Course Name: 24ME601 - Design of Transmission Systems

S. No.	Course Outcomes	COs
C311.1	Understand the concepts of design to belts, chains and rope drives.	CO1
C311.2	Compute the concepts of design to spur and helical gears.	CO2
C311.3	Discuss the concepts of design to worm and bevel gears.	CO3
C311.4	Summarize and apply the concepts of design to gear boxes.	CO4
C311.5	Demonstrate the concepts of advanced transmission systems.	CO5
C311.6	Apply the design procedures in their projects.	CO6

Semester: VI Course Name: 24ME9xx - (Professional Elective-IV)

S. No.	Course Outcomes	COs
C312.1		CO1
C312.2		CO2
C312.3		CO3
C312.4		CO4
C312.5		CO5
C312.6		CO6

Semester: VI Course Name: 24ECxx – (Open Elective-II)

S. No.	Course Outcomes	COs
C313.1		CO1
C313.2		CO2
C313.3		CO3
C313.4		CO4
C313.5		CO5

Semester: VI Course Name: 24ME602 - Digital Manufacturing

S. No.	Course Outcomes	COs
C314.1	Describe the product cycle, 2D and 3D transformations, CAD/CAM concepts.	CO1
C314.2	Interpret the fundamentals of parametric curves, surfaces and Solids.	CO2
C314.3	Use the different types of Standard systems used in CAD.	CO3
C314.4	Summarize the types of techniques used in Cellular Manufacturing and FMS.	CO4
C314.5	Explain the basic types of additive manufacturing process.	CO5
C314.6	Discuss the 3D Modelling procedure of the part.	CO6

Semester: VI Course Name: 24ME603 - Advanced Product Lifecycle Management

S. No.	Course Outcomes	COs
C315.1	Discuss the Product Lifecycle management architecture and data management.	CO1
C315.2	Explain the roles of Product Lifecycle in service and maintenance.	CO2
C315.3	Describe and Classify the varies ways of data representation.	CO3
C315.4	Demonstrate the Product lifecycle management configuration and integration with CAM.	CO4
C315.5	Illustrate the Integration of CAM with Product life cycle management.	CO5
C315.6	Distinguish the data interfaces, GD&T, annotations, manufacturing notes, Integration of CAM with Product Lifecycle Management.	CO6

Semester: VI Course Name: 24CS604 - Design Thinking

S. No.	Course Outcomes	COs
C316.1	Understand the phases of design thinking process.	CO1
C316.2	Conduct an immersion activity to create an empathy map.	CO2
C316.3	Define the key problems of the personas created.	CO3
C316.4	Apply the ideation phase steps to present the prototype ideas.	CO4
C316.5	Create a prototype with value propositions and test the prototype.	CO5
C316.6	Investigate techniques to identify new directions in design thinking.	CO6

**Semester: VI Course Name: Product Development Lab – 4
(Prototype and Validation Phase)**

S. No.	Course Outcomes	COs
C317.1	Understand and explain the real time problems.	CO1
C317.2	Analyze the methods to develop solution to the systems.	CO2
C317.3	Evaluate the performance and effectiveness of the existing systems.	CO3
C317.4	Summarize and prepare reports for the experimental determinations.	CO4
C317.5	Classify, compare and analyze business opportunities for a new product.	CO5

Semester: VI 24HS611 - Professional Communication - II (TOEFL)

S. No.	Course Outcomes	COs
C318.1	Apply effective reading strategies to read academic texts fluently and respond accurately to TOEFL-style contextual questions.	CO1
C318.2	Compose written responses with coherence, clarity, and logical flow in alignment with TOEFL-integrated writing tasks.	CO2
C318.3	Demonstrate active listening skills by comprehending academic lectures and campus conversations as required in the TOEFL Listening section, and respond appropriately.	CO3
C318.4	Engage confidently in spoken communication by effectively performing TOEFL-integrated Speaking tasks with clarity and fluency.	CO4
C318.5	Execute Listening, Speaking, Reading, and Writing (LSRW) skills, strategically to meet the standards of TOEFL iBT integrated tasks.	CO5

Semester: VI Course Name: 24CS611 - Advanced Aptitude and Coding Skills – II

S. No.	Course Outcomes	COs
C319.1	Develop advanced vocabulary for effective communication and reading skills.	C01
C319.2	Build an enhanced level of logical reasoning and quantitative skills.	C02
C319.3	Develop error correction and debugging skills in programming.	C03
C319.4	Apply data structures and algorithms in problem solving.	C04

COURSE OUTCOMES
FOURTH YEAR - SEMESTER: 08
REGULATION – 2022 (2023-24)

Semester VIII Course Name: 22ME811 - Project Work

S.No.	Course Outcomes	COs
C409.1	Understand and explain the real time problems through literatures.	CO1
C409.2	Analyze the methods to develop solution to the systems.	CO2
C409.3	Classify, compare and analyze business opportunities for a new product.	CO3
C409.4	Summarize and prepare reports for the experimental determinations.	CO4
C409.5	Evaluate the performance and effectiveness of the existing systems.	CO5
C409.6	Apply the knowledge expanding business through new product design and development.	CO6