Department of Mechanical Engineering

2020-21 COs

Course Name: Introduction to Soft Computing- KOE-036	C201	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C201.1	Comprehend the fuzzy logic and the concept of fuzziness involved in various systems and fuzzy set theory	2
C201.2	Understand the concepts of fuzzy sets, knowledge representation using fuzzy rules, approximate reasoning, fuzzy inference systems, and fuzzy logic	2
C201.3	Describe with genetic algorithms and other random search procedures useful while seeking global optimum in self-learning situations	1
C201.4	Understand appropriate learning rules for each of the architectures and learn several neural network paradigms and its applications	2
C201.5	Develop some familiarity with current research problems and research methods in Soft Computing Techniques	6

Course Name: Technical Communication- KAS 301	C202	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C202.1	Analyze the nature and objectives of Technical Communication relevant for workplace as Engineer.	4
C202.2	Utilize the Technical Writing Skills for the purpose of Technical Communication and its exposure in various dimensions.	3
C202.3	Imbibe presentation strategies inputs with confidence in facing diverse audience in required situations at workplace.	3
C202.4	Estimate the application of Technical Communication to promote their competence for various media like report generation, resume design, GD, and Interview etc.	5
C202.5	Evaluate Voice dynamics and select appropriate cues for their own efficacy as fluent and efficient communicators.	5

Course Name: Thermodynamics KME301	C203	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C203.1	Understand the thermodynamic systems, Properties, Cycle and different forms of energy, state different laws of thermodynamics and apply first law of thermodynamics on steady and non-steady flow devices	2
C203.2	Understand and analyze the working of Refrigerator, Heat Pump and Heat Engine and application of second law of thermodynamic. Understand the	4

	Principle of Increase of Entropy and evaluate the Quality of Energy.	
C203.3	Analyze the availability & Unavailability of thermal system, second law efficiency and various thermodynamics relations.	4
C203.4	Apply knowledge to solve problems related to steam, analyze p-V and T-s diagram and understand the psychometric processes	4
C203.5	Analyze the refrigeration cycles, refrigerants and refrigeration systems.	4

Course Name: Fluid Mechanics & Fluid Machines – KME 302	C204	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C204.1	Understand the basics of fluid mechanics, Bernoulli's equation and its application.	2
C204.2	Analyze different types of flow, continuity equation and Buckingham's Pi theorem for dimensional analysis and apply these concepts to solve problems	4
C204.3	Analyze laminar and turbulent flow, losses in pipes, boundary layer theory and forces on submerged bodies and apply this knowledge to solve the problems	4
C204.4	Apply the principle of impact of jet and working of different types of turbines and evaluating the suitable turbines under different conditions	3
C204.5	Apply the principle and working of different types of pumps and other hydraulic devices evaluating the suitable pump under different conditions	3

Course Name: Material Engineering- KME 303	C205	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C205.1	Analyse the properties of ferrous and non-ferrous materials.	4
C205.2	Analyse the mechanism of material failure under different loading.	4
C205.3	Analyse the microstructure properties and phase diagram of engineering Materials.	4
C205.4	Apply heat treatment method to modify the material properties.	3
C205.5	Analyse effect of different alloying elements on the properties of ferrous and nonferrous alloys.	4

Course Name: Fluid Mechanics Lab- KME 351	C206	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C206.1	Apply the concept of the Impact of jet and orifice meter.	3
C206.2	Analyze different types of notches and major losses in pipes	4
C206.3	Apply the concept of venturimeter, Bernoulli's theorem and Reynold's experiment.	3
C206.4	Analyze the concept of equilibrium of floating bodies and minor losses in pipes	4

Course Name: Material Testing Lab- KME 352	C207	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C207.1	Test the mechanical properties of material on Universal testing machine and also able to analyse test results.	4
C207.2	Evaluate materials' hardness and also able to analyse effect of different processes on hardness.	5
C207.3	Evaluate the toughness of materials by izod and charpy test.	5
C207.4	Analyse the effect of heat treatment on the same.	4
C207.5	Evaluate the modulus rigidity through torsion test and able to analyse fatigue failure of the material using Fatigue test.	5

Course Name: Computer Aided Machine Drawing Lab-KME 353	C208	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C208.1	Understand and analyse the different kinds of engineering drawing symbols as per BIS Codes with classification of Drawings: Machine drawings etc	4
C208.2	Analyse the limit, fits and tolerance system and its application in machine drawing	4
C208.3	Create the 3D models using the basic concept of 2D modelling	6
C208.4	Draw the assembly of machine with the help of different detailed drawing of machine components	6
C208.5	Create the cut section view of machine assembly using CAD software	6

Course Name: Mini Project or Internship- KME 354	C209	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C209.1	Apply Technical students to the industrial environment, which cannot be simulated in the classroom and hence creating competent professionals in the industry.	3
C209.2	Understand possible opportunities to learn, understand and sharpen the real time technical /managerial skills required at the job.	2
C209.3	Apply the current technological developments relevant to the subject area of training.	3
C209.4	Apply the experience gained from the ‘Industrial Internship’ in discussions held in the classrooms.	3
C209.5	Create conditions conducive to quest for knowledge and its applicability on the job.	6

Course Name: Computer System Security-KNC 301	C210	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C210.1	Discover software bugs that pose cybersecurity threats, explain and recreate exploits of such bugs in realizing a cyber-attack on such software, and explain how to fix the bugs to mitigate such threats	1
C210.2	Discover cyber-attack scenarios to web browsers, and web servers, explain various possible exploits, recreate cyber-attacks on browsers, and servers with existing bugs, and explain how to mitigate such threats.	1
C210.3	Articulate the urgent need for cybersecurity in critical computer systems, networks, and the worldwide web, and explain various threat scenarios	2
C210.4	Explain the difference between Systems Cyber Security, Network Cyber Security, and cryptography, crypto-protocols, etc.	2
C210.5	Articulate the cyber threats to critical infrastructures	2

Course Name: MATHEMATICS III KAS 402	C211	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C211.1	Study the methods to solve Partial Differential Equations	1
C211.2	Apply the concept of method of separation of variables to solve wave, heat, Laplace and transmission equations.	3
C211.3	Evaluate Moments, M,G.F Correlations, linear regression.	6
C211.4	Apply the concept of probability to solve discrete and continuous probability distributions.	3
C211.5	Apply the concept of sampling to study t-test, F-test and Chi-square test, One way Analysis of Variance (ANOVA)	3

Course Name: Universal Human Values & Professional Ethics- KVE401	C212	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C212.1	Understand difference between values and skills, need and process of value education, meaning of happiness and prosperity.	2
C212.2	Understand the difference between the Self and the Body, the meaning of Harmony in the Self "the Co-existence of Self and Body"	2
C212.3	Analyze the values of harmonious relationship based on trust, respect and other naturally acceptable feelings in human-human relationships , their role in ensuring a harmonious society	4
C212.4	Analyse the harmony in nature and existence, their mutually fulfilling participation in the nature.	4
C212.5	Decide the role of holistic understanding of harmony on professional ethics.	5

Course Name: Applied Thermodynamics- KME 401	C213	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C213.1	Analyse the basic power cycles and performance of I.C engines	4
C213.2	Analyze the process of combustion of fuel and formation of flue gases.	4

C213.3	Understand the working and performance of boiler, draught and condenser.	2
C213.4	Analyse the design and working of nozzles and steam turbines.	4
C213.5	Understand the principle, working & performance of gas turbines and jet propulsion.	2

Course Name: Engineering Mechanics- KME 402	C214	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C214.1	Apply the effect of applied, non-applied and frictional forces on rigid bodies/body.	3
C214.2	Analysis the statically determinate truss/beams under various loading conditions.	4
C214.3	Calculate centroid/moment of inertia of composite body.	5
C214.4	Analysis of displacement, velocity, acceleration etc of rigid body under dynamic condition with or without consideration of applied forces.	4
C214.5	Analysis of stresses and its effect on under applied load on one dimensional bodies, beams and shafts.	4

Course Name: Manufacturing Processes- KME 403	C215	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C215.1	Analyze the various primary manufacturing processes.	4
C215.2	Analyze the phenomenon of metal cutting process	4
C215.3	Analyze grinding and different types of super finishing operations	4
C215.4	Apply the knowledge of various welding processes and their thermodynamic and metallurgical aspects.	3
C215.5	Understand the concepts of non-conventional machining processes.	2

Course Name: APPLIED THERMODYNAMICS LAB- KME 451	C216	Course Year:II	2020-21

Sr. No	Course Outcomes	BL
C216.1	Understand the construction and working of fire tube and water tube boilers, their parts, differences, mountings and accessories.	2
C216.2	Understand the construction and working of two-stroke, four-stroke petrol and diesel engines, their parts, working strokes and applications.	2
C216.3	Understand the construction and working of steam engine, its components and the modified Rankine cycle.	2
C216.4	Understand the construction and working of the steam turbines, its types, differences between impulse & reaction turbine and the compounding of impulse turbines.	2
C216.5	Understand the construction and working of gas turbine and its types, working and process of Brayton's cycle.	2

Course Name: Manufacturing Process Lab - KME 452	C217	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C217.1	Apply the casting process and remember various elements of gating system.	3
C217.2	Apply different operations of lathe machine.	3
C217.3	Apply different operations of milling machine.	3
C217.4	Apply different operations of shaper machine.	3
C217.5	Apply the concept of welding operations in welding shop.	3

Course Name: CAMD Lab- KME 453	C218	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C218.1	Understand the different types of Engineering Drawing and BIS Codes.	2
C218.2	Analyze the interchangeability system and its requirement in machine drawing.	4
C218.3	Able to draft the 3D/2D machine and allied component.	5
C218.4	Able to interpret and understand sketching the different machine components analysis on drawing software.	4
C218.5	Remember the sketching part Modelling & Assemblies.	1

Course Name: Python Programming- KNC-402	C219	Course Year: II	2020-21

Sr. No	Course Outcomes	BL
C219.1	Understand read and write simple Python programs.	2
C219.2	Apply the concept of conditionals and loops in Python programs.	3
C219.3	Analyse Python functions and use Python in data structures –- lists, tuples, dictionaries.	4
C219.4	Understand input/output with files in Python.	2
C219.5	Apply the concept of searching, sorting and merging in Python.	3

Course Name: Heat & Mass Transfer- KME 501	C301	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C301.1	Analyze the basic laws and mechanism of different mode of heat transfer and differential governing equations for conduction.	4
C301.2	Evaluate amount of heat transfer through Fins and understand the transient heat conduction.	5
C301.3	Analysis of heat transfer through convection for different type of surface and also understand the difference between natural and forced convection.	4
C301.4	Analyze the basic laws and principles of radiation and implement them for the evaluation of equations and problems of heat transfer through radiations.	4

C301.5	Summarize heat exchanger phenomenon of parallel and counter flow and also remember the phenomenon of condensation, boiling and fundamentals of mass transfer.	4

Course Name: Strength of Materials- KME 502	C302	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C302.1	Analyse the effect of applied load on the solid body under various loading conditions.	4
C302.2	Evaluate stresses and deflection by various methods on beams and shafts	5
C303.3	Analyse spring and column under various loading conditions	4
C304.4	Analyse the stresses developed in pressure vessels	4
C305.5	Apply the concept of bending stresses on curved and unsymmetrical beams .	3

Course Name: Industrial Engineering-KME 503	C303	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C303.1	Analyze the concept of production system, productivity, facility and process planning in various industries.	4
C303.2	Apply the various forecasting and project management techniques.	3
C303.3	Analyze the concept of breakeven analysis, inventory control and resource utilization using queuing theory.	4
C303.4	Apply principles of work study and ergonomics for design of work systems.	3
C303.5	Formulate the mathematical models for optimal solution of industrial problems using linear programming approach.	5

Course Name: CIM- KME 051	C304	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C304.1	Analyse the basic concepts of automation, computer numeric control machining.	4
C304.2	Apply the algorithms of line generation, circle generation, transformation, curve, surface modeling and solid modeling	3
C304.3	Analyse group technology, computer aided process planning, flexible manufacturing, Industry 4.0, robotics	4
C304.4	Analyse information system and material handling in CIM environment, rapid prototyping	4
C304.5	Illustrate Group Technology, FMS concepts	4

Course Name: Mechatronic Systems- KME 052	C305	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C305.1	Identify key elements of mechatronics and its representation by block diagram.	4

C305.2	Understand the concept of sensors and use of interfacing systems.	2
C305.3	Understand the concept and applications of different actuators.	2
C305.4	Illustrate various applications of mechatronic systems.	4
C305.5	Design PLC ladder programming and implementation in real life problem.	5

Course Name: I C Engine Fuel & Lubrication- KME 054	C306	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C306.1	Apply the air standard cycles, fuel-air cycles and actual cycles to check the performance parameters and testing of IC Engine	3
C306.2	Analyze the combustion phenomena in SI and CI engines and factors influencing combustion chamber design.	4
C306.3	Analyze the carburetion, fuel Injection for SI Engine and latest developments in IC Engines.	4
C306.4	Understand the effect of engine emissions on environment, human health and fuel used in IC Engines.	2
C306.5	Understand the cooling, lubrication and ignition system in IC Engines.	2

Course Name: Automotive Engines & Combustion- KAU 051	C 307	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C307.1	Apply the concepts of thermodynamics to air standard cycle in IC Engines & knowledge about performance parameters and testing of IC engine.	3
C307.2	Understand the phenomena of Flames Propagation & Stoichiometry relations.	2
C307.3	Understand the phenomena of combustion and its application in SI and CI engines & Understand the essential system of IC engine	2
C307.4	Understand the concept of carburetion, fuel injection for SI Engine and knowledge about latest trends & developments in IC Engines.	2
C307.5	Understand the effect of engine emission on the environment and human health and methods of reducing it.	2

Course Name: Advanced Welding- KME 055	C308	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C308.1	Understand the physics of arc welding process and various operating characteristics of welding power source.	2
C308.2	Understand various welding processes and their applications.	2
C308.3	Apply heat flow in welding and physical metallurgy of weldments.	3
C308.4	Understand the knowledge of welding for repair & maintenance, along with the weldability of different materials.	2
C308.5	Understand the concept of weld design and testing of weldments in industrial environment.	2

Course Name: Programming, Data Structures and Algorithms using Python- KME 056	C309	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C309.1	Understand the numbers, math's function, strings, list, tuples, and dictionaries in pythons.	2
C309.2	Apply conditional statement and functions in python.	3
C309.3	Apply file handling techniques in python.	3
C309.4	Analyze the graphical demonstration in python.	4
C309.5	Apply techniques of Classes and Object Concept in Python.	3

Course Name: Fuels & Combustion- KME 058	C310	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C310.1	Analyze the properties and composition of solid fuels	4
C310.2	Understand the classification and processing of liquid and gaseous fuels.	2
C310.3	Analyze the products of combustion.	4
C310.4	Illustrate the working of different combustion equipment.	4
C310.5	Understand the fundamental concept of air pollution and its control.	2

Course Name: Automotive Chasis & Suspension- KAU 052	C311	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C311.1	Understand different types of automotive chassis and frames used in automobiles.	2
C311.2	Analysis of transmission and drive line components used in automobiles.	4
C311.3	Evaluate the performance of axles and types of steering system in automobiles.	5
C311.4	Analysis of braking and suspension system of automobiles.	4
C311.5	Design and Analysis of the wheels and tyres & recent advancements made in components of automobiles.	6

Course Name: Indian Tradition Culture & Society (ITCS)- KNC-502	C312	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C312.1	Understand the roots of the contemporary issues faced by our nation and try to locate possible solutions to these challenges by digging deep into our past.	2
C312.2	Understand the importance of our surroundings and encourage the students to contribute towards sustainable development.	2
C312.3	Explain the holistic life styles of Yogic-science and apply wisdom capsules in Sanskrit literature that are important in modern society with rapid technological advancements and societal disruptions	2

C312.4	Understand the issues related to 'Indian' culture, tradition and its composite character.	2
C312.5	Apply the Indian Knowledge System, Indian perspective of modern scientific world-view and basic principles of Yoga and holistic health care system.	3

Course Name: Heat Transfer Lab- KME 551	C313	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C313.1	Apply the basic principle of conduction and convection on various elements and also evaluate the amount of heat flow through rod in conduction and convection.	3
C313.2	Summarize the comparative study about the quantity of heat transfer between fluids and solid boundaries.	4
C313.3	Analyze the principle of combined heat transfer and evaluate the amount of heat exchanged between fluids flowing within heat exchangers	4
C313.4	Built the ability to carry out simple experimental work in irradiative heat and to understand its application.	2

Course Name: Python Lab- KME 552	C314	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C314.1	Apply conditional statement, loops condition and functions in python program.	3
C314.2	Solve mathematical and mechanical problems using python program	5
C314.3	Plot various type of chart using python program	5
C314.4	Analyze the mechanical problem using python program	4

Course Name: IOT Lab- KME 553	C315	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C315.1	Understand the concept of Internet of Things.	2
C315.2	Implement interfacing of various sensors with Arduino/Raspberry Pi.	4
C315.3	Demonstrate the ability to transmit data wirelessly between different devices.	5
C315.4	Show an ability to upload/download sensor data on cloud and server.	5
C315.5	Hardware interfacing of Arduino with wifi modules.	4

Course Name: Mini Project/Internship Assessment- KME 554	C316	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C316.1	Apply technical knowledge to the students to cope with industrial	3

	environment, which can not be simulated in the classroom and hence creating competent professionals in the Industry	
C316.2	Understand possible opportunities to learn, understand and sharpen the real time technical /managerial skills required at job.	2
C316.3	Apply the current technological developments relevant to subject area of training.	3
C316.4	Apply the experience gained from the industrial internship in the discussion held in the classrooms	3
C316.5	Create conditions conducive to quest for knowledge and its applicability on the job	6

Course Name: Refrigeration & Air Conditioning- KME 601	C317	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C317.1	Analyze the performance of air refrigeration systems.	4
C317.2	Analyze the performance of vapor compression refrigeration systems.	4
C317.3	Analyze the performance of vapor absorption refrigeration system, categorize the refrigerants and describe the properties of refrigerants.	4
C317.4	Analyze different psychrometric processes and examine the cooling load calculation.	4
C317.5	Illustrate the working of different refrigeration and air-conditioning equipments, non-conventional refrigeration systems and cold storage.	4

Course Name: Machine Design-KME602	C318	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C318.1	Design the machine components against static and fatigue loading.	5
C318.2	Design the riveted joint, welded joint and shafts.	5
C318.3	Design the sliding and rolling contact bearing.	5
C318.4	Design the spur and helical gear.	5
C318.5	Design of clutch and engine cylinder and piston.	5

Course Name: Theory of Machine-KME 603	C319	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C319.1	Calculate velocity and acceleration for 4 bar and slider crank mechanism.	3
C319.2	Develop cam profiles for different motion of followers and apply the concepts of gears.	6
C319.3	Apply the static and dynamic force analysis of four bar mechanism and slider crank mechanism.	3
C319.4	Apply the concept of static and dynamic balancing and principles of governors.	3
C319.5	Apply the principle of brakes, dynamometer and gyroscope and understand it’s working.	3

Course Name: Non- Destructive Testing- KME 061	C320	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C320.1	Apply the concept of visual inspection method in detecting surface defects.	3
C320.2	Apply the concept of penetrant testing method and magnetic particle testing method for detecting surface and sub-surface flaws.	3
C320.3	Apply the concept of radiographic testing method for detecting internal defects.	3
C320.4	Apply the principles of Ultrasonic testing in medical and engineering areas for detecting internal flaws.	3
C320.5	Apply the concept of eddy current testing method for detecting flaws.	3

Course Name: Artificial Intelligence- KME 062	C321	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C321.1	Understand the key components of the artificial intelligence field and its importance in Mechanical Engineering in terms of intelligent agents.	2
C321.2	Analyze the problem as a state space, graph, design heuristics and selection of different search or game-based techniques to solve them.	4
C321.3	Apply the fundamentals of knowledge representation and evaluate the working knowledge of reasoning in the presence of incomplete and/or uncertain information.	3
C321.4	Apply machine learning techniques to real-world problems on both complete and hidden data.	3
C321.5	Create the basics of pattern recognition process, classification techniques and apply the same on real world problems	6

Course Name: Gas Dynamics & Jet Propulsion- KME 064	C322	Course Year:III	2020-21

Sr. No	Course Outcomes	BL
C322.1	Apply the basic laws for the investigation of flow through ducts.	3
C322.2	Analzyse the concept of compressible fluid flow and flow through variable area ducts.	4
C322.3	Analyze the compressible flow through variable area ducts.	4
C322.4	Analzye the basic principle and types of jet and rocket propulsion.	4
C322.5	Apply the basic laws for the thermodynamics analysis of jet and rocket propulsion.	3

Course Name: Automotive Electrical & Electronics- KAU 061	C323	Course Year:III	2020-21

Sr. No	Course Outcomes	BL
C323.1	Understand the basic concepts of electrical systems used in automobile.	2

C323.2	Understand the constructional features of charge storage devices and methods to test these devices for their healthy operation.	2
C323.3	Understand the principles and characteristics of charging and starting system of automobile and study the various faults occurring in system.	2
C323.4	Understand the ignition and auxiliary system types & constructional features used in automobile.	2
C323.5	Describe the principles and architecture of electronics systems and its components present in an automobile related to data transfer, instrumentation, control, and security systems.	1
C324.6	Understand latest trends developed in electrical and electronic systems of automobile and their advantages over conventional technologies.	2

Course Name: Software Project Management- KOE 068	C324	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C324.1	Identify project planning objectives, along with various cost/effort estimation models.	5
C324.2	Organize & schedule project activities to compute critical path for risk analysis.	2
C324.3	Monitor and control project activities.	2
C324.4	Formulate testing objectives and test plan to ensure good software quality under SEI-CMM.	5
C324.5	Configure changes and manage risks using project management tools.	5

Course Name: Constitution of India- KNC 601	C325	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C325.1	Identify and explore the basic features and modalities about Indian constitution.	5
C325.2	Differentiate and relate the functioning of Indian parliamentary system at the centre and state level.	4
C325.3	Differentiate different aspects of Indian Legal System and its related bodies.	4
C325.4	Discover and apply different laws and regulations related to engineering practices.	5
C325.5	Correlate role of engineers with different organizations and governance models.	4

Course Name: RAC Lab- KME 651	C326	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C326.1	Demonstrate the working of refrigeration and air-conditioning systems and its various components.	2
C326.2	Analyze the performance parameters of refrigeration and air-conditioning systems.	4
C326.3	Analyze the performance parameters of a two-stage air compressor.	4
C326.4	Analyze the performance parameters of an air washer.	4

Course Name: MD Lab- KME 652	C327	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C327.1	Apply the principles of solid mechanics to design various machine Elements subjected to static and fluctuating loads.	3
C327.2	Write computer programs and validate it for the design of different machine elements	5
C327.3	Evaluate designed machine elements to check their safety.	5

Course Name: TOM Lab- KME 653	C328	Course Year: III	2020-21

Sr. No	Course Outcomes	BL
C328.1	Demonstrate various mechanisms, their inversions and brake and clutches in automobile	4
C328.2	Apply cam-follower mechanism to get desired motion of follower.	3
C328.3	Apply the concepts of gears and gear train to get desired velocity ratio for power transmission.	3
C328.4	Apply the concept of governors to control the fuel supply in engine.	3
C328.5	Determine the balancing load in static and dynamic balancing problem	4

Course Name: Understanding the human being Comprehensively Human Aspiration audits fulfillment-ROE 074	C401	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL
C401.1	Understand and work on all-encompassing resolution to avoid problems.	2
C401.2	Understand the role of human being, the participation of human being, the conduct of human being in this Nature and Existence.	2
C401.3	Analyze the higher activities of the Self, like contemplation, understanding and realization , existence and nature in detail.	4
C401.4	Evaluate the existence and the nature on the basis of understanding of higher activities of the Self.	5
C401.5	Understand all levels of human existence and ensuring living with fulfillment at all levels.	2

Course Name: Power Plant Engineering- RME 071	C402	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL
C402.1	Analyse fuel combustion, load estimation and power plant economics.	4
C402.2	Analyse the working of different component of steam power plant.	4
C402.3	Analyse the working of different component of diesel and gas turbine power plant.	4
C402.4	Analyse the working of different component of nuclear and hydro power plant.	4

C402.5	Analyse different electrical systems, instrument used in power plant and pollution during power generation	4

Course Name: Operations Research- RME 075	C403	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL
C403.1	Develop operation research models and apply LPP Method.	5
C403.2	Apply the mathematical tools involved in transportation and assignment problems.	3
C403.3	Evaluate the optimal strategy for games and optimal sequence for machines.	5
C403.4	Solve inventory control and simulation problems for practical purposes.	5
C403.5	Analysis of Queuing and project management problems.	4

Course Name: CAD/CAM- RME 701	C 404	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL
C404.1	Apply basic structure of Computer graphics, geometrical transformations and geometric modelling.	3
C404.2	Apply graphic standards & data storage and finite element modelling.	3
C404.3	Apply fundamental and advanced features of CNC machines & basic concepts of CNC programming and machining	3
C404.4	Illustrate the fundamentals of robotics and Quality function deployment.	4
C404.5	Illustrate Group Technology, Rapid prototyping and CIM concepts.	4

Course Name: Automobile Engineering- RME 702	C 405	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL
C405.1	Apply the law of mechanics to perform basic calculations for rolling, air, gradient resistance, Gear ratio determination and have understanding about gear box.	3
C405.2	Understand different types of Transmission System and steering geometry.	2
C405.3	Apply the law of physics to calculate weight transfer during braking and have knowledge of different types of loads acting on the chassis and suspension system.	3
C405.4	Analyze different types of electrical system and fuel supply system.	4
C405.5	Study the emission norms apply worldwide, EVs and techniques to control the emissions, contamination in medicinal plant materials.	2

Course Name: CAD/CAM Lab- RME 751	C406	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL

C406.1	Create complex geometries of machine components in sketcher mode.	6
C406.2	Create the programs to generate analytical and synthetic curves used in engineering practice.	6
C406.3	Create freeform shapes in part mode to visualize components.	6
C406.4	Create complex engineering assemblies using appropriate assembly constraints.	6
C406.5	Create a part program for turning and milling of given components as per drawing.	6

Course Name: IC Engine & Automobile Lab- RME 752	C407	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL
C407.1	Conduct experiments to understand the configuration of different types of gearbox.	2
C407.2	Analyze the performance of four strokes CI and SI Engines.	4
C407.3	Study and analyze the exhaust gases on gas analyzer experiment setup.	4
C407.4	Conduct experiments to understand the working of different subsystems (i.e. braking system, ignition, differential mechanism and steering mechanism) of an automobile.	3
C407.5	Conduct experiments to understand the different types of injection systems used in automobile.	2

Course Name: Industrial Training- RME 753	C 408	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL
C408.1	Understand working environment of a company.	2
C408.2	Apply knowledge and skill in industry problem which have been studied during program.	3
C408.3	Analyze day to day real time problem of an industry.	4
C408.4	Evaluate themselves and put effort to fulfill the gap between industry and academia.	5
C408.5	Create their project collaboration with industry.	6

Course Name: Project- RME 754	C409	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL
C409.1	Apply methods and materials to carry out experiments.	3
C409.2	Apply the procedures with a concern for society, environment and ethics.	3
C409.3	Analyze and discuss the results to draw valid conclusions.	4
C409.4	Create a report as per recommended format and defend the work.	6
C409.5	Evaluate the possibility of publishing papers in peer reviewed journal/conference proceedings.	5

Course Name: Renewable Energy	C410	Course Year: IV	2020-21

Sources- ROE 086			

Sr. No	Course Outcomes	BL
C410.1	Understand the significance of various non-conventional energy resources, their availability and Limitations	2
C410.2	Design and analyse of solar thermal collectors to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, manufacturability, and sustainability	6
C410.3	Apply the modern engineering techniques such Magneto-hydrodynamics (MHD) generator and fuel cell for non conventional energy resources	3
C410.4	Evaluate the impact of wind energy resources and plants as an engineering solution in societal and environmental context in order to have sustainable development	5
C410.5	Understand the basic design of Ocean thermal energy plant and wave energy plant to apply the modern engineering practices.	2

Course Name: Non- Destructive Testing- RME 080	C411	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL
C411.1	Apply the concept of visual inspection method in detecting surface defects.	3
C411.2	Apply the concept of penetrant testing method and magnetic particle testing method for detecting surface and sub-surface flaws.	3
C411.3	Apply the concept of radiographic testing method for detecting internal defects.	3
C411.4	Apply the principles of Ultrasonic testing in medical and engineering areas for detecting internal flaws.	3
C411.5	Apply the concept of eddy current testing method for detecting flaws.	3

Course Name: Advance Welding- RME 081	C412	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL
C412.1	Understand the basics of welding and its classification.	4
C412.2	Analyze different types of welding processes.	4
C412.3	Apply the principles of heat flow in welding.	3
C412.4	Analyze repair and maintenance welding processes and weldability.	4
C412.5	Analyze the weld design, weld defects and inspection of welding.	4

Course Name: Energy Conservation & Management- RME 083	C413	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL
C413.1	Understand the energy scenario, energy auditing and energy auditing	2

	instruments	
C413.2	Analysis of electricity billing, motors, their efficiency and illumination, lighting	4
C413.3	Evaluate the energy conservation techniques in thermal systems such as Boilers, furnaces, thermic fluid heaters, steam traps, etc	5
C413.4	Analyse the energy conservation in mechanical equipment like pumps, fans, blowers, compressed air systems, RAC systems	4
C413.5	Apply the concept of energy economics and Calculate discount period, payback period, internal rate of return, net present value	3

Course Name: Total Quality Management- RME 085	C414	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL
C414.1	Understand the concept of quality and total quality management.	2
C414.2	Analyze the role of organization structure towards quality.	4
C414.3	Analyze the statistical quality control techniques.	4
C414.4	Analyze defect along with diagnosis and design of system for reliability and maintainability.	4
C414.5	Apply different ISO systems and optimization techniques.	3

Course Name: Seminar-RME 851	C415	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL
C415.1	Deliver the ideas towards industrial exposure and implement that to enhance their personality.	3
C415.2	Analyze and enhance their knowledge with the recent trends in technological developments taking place in the field of their own interest.	4
C415.3	Create own models based on their industrial knowledge and get familiar with multidisciplinary technologies.	6
C415.4	Analyze about the expose himself in the topics relates to beyond curriculum and also remember professional ethics.	4

Course Name: Project II- RME 852	C416	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL
C416.1	Apply methods and materials to carry out experiments.	3
C416.2	Apply the procedures with a concern for society, environment and ethics.	3
C416.3	Analyze and discuss the results to draw valid conclusions.	4
C416.4	Create a report as per recommended format and defend the work.	6
C416.5	Evaluate the possibility of publishing papers in peer reviewed journal/conference proceedings.	5

Course Name: Supply Chain Management- RME 072	C417	Course Year: IV	2020-21

Sr. No	Course Outcomes	BL
C417.1	Understanding the basic concept of supply chain management and their	2

	strategies.	
C417.2	Apply the supply chain drivers and metrics with help of case studies.	3
C417.3	Analyse the planning of demand and supply in a supply chain.	4
C417.4	Apply the network design in the supply chain.	3
C417.5	Understand the factors influencing logistics and decisions, benchmarking and performance measurement.	2