

2020-21/I/FUNDAMENTAL OF MECHANICAL ENGINEERING AND MECHATRONICS/KME-101T		
S. No.	Course Outcome	BL
Student will be able to:-		
1	The students will be able to understand the concept of stress and strain, factor of safety, beams	2
2	engines, electric and hybrid vehicles, refrigerator and heat pump, airconditioning.	2
3	The students will be able to understand fluid properties, conservation laws, hydraulic machinery used in real life.	2
4	the knowledge of accuracy, error and calibration, limit, fit, tolerance and	2
5	Industrial application, the different types of mechanical actuation system,	2

2020-21/III/ Material Engineering/KME 303		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Students will be able to understand the fundamental of atomic structures and crystal imperfections and able to analyze the properties of ferrous and non-ferrous materials.	1,2,3,4
2	Students will be able to understand the method of material testing and able to evaluate mechanical properties using different testing methods.	1,2,3,4,5
3	Students will be able to analyze the microstructures properties and phase diagram of engineering materials.	1,2,3,4,5
4	Students will be able to understand the methods of heat treatment and also able to apply these methods to modify the material properties	1,2,3,4,5
5	Students will be able to understand properties of ceramic, plastic and composite materials and also able to analyze the application of these applications.	1,2,3,4,5

2020-21/III/ Material Testing Lab Lab/KME 352		
S. No.	Course Outcome	BL
Student will be able to:-		
1	The students will be able to test the mechanical properties of material on Universal testing machine and also able to analyze test results.	3,4,5
2	The students will be able to evaluate metals hardness and also able to analyze effect of different processes on hardness.	3,4,5
3	The students will be able to evaluate the toughness of materials by Izod and Charpy test	3,4,5
4	The students will be able to identify the micro structure of different materials and also able to analyze the effect of heat treatment on same of different metals.	3,4,5
5	The students will be able to evaluate the modulus of rigidity through torsion test and able to analyze fatigue failure of the material using Fatigue test.	3,4,5

2020-21/III/ Fluid Mechanics & Machines/KME 302		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Understand and analyze the basics of fluid mechanics, Bernoulli's equation and its application	2,4
2	Analyze different types of flow, continuity equation and Buckingham's Pi theorem for dimensional analysis and apply these concepts to solve problems	3,4
3	Remember, understand, analyze laminar and turbulent flow, losses in pipes, boundary layer theory and forces on submerged bodies and apply this knowledge to solve the problems	1,2,3,4
4	Understand and apply the principle of impact of jet and working of different types of turbines and evaluating the suitable turbines under different conditions	2,3,5
5	Understand and apply the principle and working of different types of pumps and other hydraulic devices evaluating the suitable pump under different conditions	2,3,5

2020-21/III/ Fluid Mechanics Lab/KME 351		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Understand, analyze and apply the concept behind the impact of jet and practical use of orifice meter.	2,3,4
2	Analyze different types of notches and major losses in pipes	4
3	Understand and analyze the concept of venturimeter, Bernoulli's theorem and Reynold's experiment.	2,4
4	Analyze and apply the concept of stable equilibrium of floating bodies, analyze minor losses in pipes and evaluating different types of minor losses in pipes.	3,4

2020-21/III/ Thermodynamics/KME 301		
S. No.	Course Outcome	BL
Student will be able to:-		
1	steady and non steady flow devices.	2,4,5
2	evaluate the Quality of Energy.	2,4,5
3	Analyze availability of thermal system, second law efficiency and various thermodynamics relations.	4,5
4	Apply knowledge to solve problems related to steam, analyze p-V and T-s diagram and understand psychometric processes.	2, 3,4,5
5	Analyze refrigeration cycles, refrigerants and refrigeration systems.	4,5

2020-21/III/ Technical Communication/KAS 301		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Students will be enabled to understand the nature and objective of Technical Communication relevant for the work place as Engineers.	1, 2
2	Students will utilize the technical writing for the purposes of Technical Communication and its exposure in various dimensions.	3
3	Students would imbibe inputs by presentation skills to enhance confidence in face of diverse audience.	3
4	Technical communication skills will create a vast know-how of the application of the learning to promote their technical competence	6
5	It would enable them to evaluate their efficacy as fluent & efficient communicators by learning the voice-dynamics.	5

2020-21/III/ Computer System Security/KNS 301		
S. No.	Course Outcome	BL
Student will be able to:-		
1	To discover software bugs that pose cyber security threats and to explain how to fix the bugs to mitigate such threats	1, 2
2	To discover cyber attack scenarios to web browsers and web servers and to explain how to mitigate such threats	2
3	To discover and explain mobile software bugs posing cyber security threats, explain and recreate exploits, and to explain mitigation techniques.	3
4	To articulate the urgent need for cyber security in critical computer systems, networks, and world wide web, and to explain various threat scenarios	4
5	To articulate the well known cyber attack incidents, explain the attack scenarios, and explain mitigation techniques.	5, 6

2020-21/III/ Introduction to Soft Computing/KOE 036		
S. No.	Course Outcome	BL
Student will be able to:-		
1	involved in various systems and fuzzy set theory.	1,2
2	representation using fuzzy rules, approximate reasoning,	2,3
3	procedures useful while seeking global optimum in self learning	4
4	architectures and learn several neural network paradigms and	2,3
5	research methods in Soft Computing Techniques.	5, 6

2020-21/IV/ I C Engines & Compressors/ RME 051		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Apply the basic power cycles, fuels and testing & performance for I.C engines.	3
2	Analyze combustion phenomena & grasps the concepts of ignition and carburetion system for S.I engine.	4
3	Analyze combustion phenomena, fuel injection for C.I engine and grasps basics of pollution control.	4

4	Evaluate the fundamentals and applications of cooling, lubrication as well as basics of fuels, alternative fuels of IC Engines.	5
5	Understand the brief description of various types of compressor along with the application of compressors in IC Engines.	1,2

2020-21/V/ Manufacturing Science & Technology II/ RME 503		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Understand and analyse the basic concepts of theory of metal cutting	BL-2, 3,4
2	Understand and analyse the construction & operations performed on various machine tools.	BL-4
3	Understand the principle of grinding and different types of super finishing operations.	BL-2,4,5
4	Understand and analyse different welding and allied processes with their thermodynamic and metallurgical aspects.	BL-4,5
5	Understand the concepts of advanced machining and welding processes	BL-2,4,5

2020-21/V/ Heat & Mass Transfer/ RME 502		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Student will be able to understand and implement the basic laws and mechanism of different mode of heat transfer and differential governing equations for conduction.	1,2
2	Student will be able to analyze and evaluate heat transfer through Fins and understand the transient heat conduction.	3,4
3	Student will be able to analyze heat transfer through convection for different type of surface and also understand the difference between natural and forced convection.	1,3,4
4	radiations.	2,3,4
5	Student will be able to understand the heat exchanger analysis and also remember the phenomenon of condensation, boiling and fundamentals of mass transfer.	3,4

2020-21/V/ Machine Design I/ RME 501		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Remembering the design fundamentals and theories of failure	1,2
2	Understanding the machine components under fluctuating loads and riveted joints.	1,2
3	Applying the bending and torsion theory on the shaft subjected to static and fluctuating used in various machines.	3
4	Analys the mechanical springs used in various machines	4,5
5	Create the keys and coupling and power screws used in various machines	4,5

2020-21/V/ Design & Simulation Lab I/RME 551		
S. No.	Course Outcome	BL
Student will be able to:-		
1	The student will be able to create cotter & knuckle joint.	5
2	The student will be able to analyze rivet joint for boilers.	5
3	The student will be able to evaluate dia of the shaft for combined loading for given application.	4,5
4	The student will be able to understand coupling & keys for given application.	4,5
5	The student will be able to apply SOM theory in design springs & screw jack for given application	3,4

2020-21/V/ Seminar/ RME 559		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Enhancement of personality by the development of presentation skills and delivering ideas.	2
2	Students are updated with the recent trends in technological developments taking place in the field of their own interest.	3
3	The student will be able to get familiar with multidisciplinary technologies.	4
4	The student will be exposed to the topics beyond curriculum.	5

2020-21/V/ I C Engines & Compressors/ RME 051/KME 054		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Apply the basic power cycles ,fuel -air cycles and actual cycles for I.C. engines.	3
2	Analyze combustion phenomenon and grasps the concept of ignition and carburetion system for I.C. engines.	4
3	Analyze combustion phenomenon, fuel Injection for C.I. engines and grasps basics of pollution control.	4
4	Evaluate the fundamentals and applications of cooling, lubrication ,basics of fuels as well as Testing and Performance of IC engines.	5
5	Understand the brief description of the various types of compressors along with the application of compressors in IC Engines.	1,2

2020-21/V/ Managerial Economics/RAS 501		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Able to understand basic concept of demand and its nature in economics.	BL-2
2	Ability to understand the supply and analyze its determining factors responsible for demand forecasting.	BL-2
3	Able to analyze the cost analysis.	BL-4
4	Able to analyze the different market structure	BL-4
5	Able to understand the concept of nature and characteristics of Indian economy, business cycle in national income calculations.	BL-2

2020-21/V/Sociology/RAS 502		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Remembering the concept of Industrial Sociology	1
2	Analyse the causes and consequences of rise and development of industry	4
3	Evaluate the process of industrialisation in India	5
4	Discuss the contemporary issues in Industrial sociology	2
5	Create model of industrialisation and environmental issues	6

2020-21/V/Fuels and Combustion/KME 058		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Understand the properties of different types of fuel with their application	2
2	Classify different types of fuels.	2
3	Understand the concept of combustion	2
4	Understand the fundamental concept of air pollution and its control	2
5	Calculate various properties of the fuels	3,4
6	Analyze the flue gases	4,5

2020-21/V/INDIAN TRADITION, CULTURE AND SOCIETY/RNC-502/KNC 502		
S. No.	Course Outcome	BL
Student will be able to:-		
1	To identify the roots and details of some of the contemporary issues faced by our nation and try to locate possible solutions to these challenges by digging deep into our past.	1,2
2	To understand the importance of our surroundings and encourage the students to contribute towards sustainable development.	2,3

3	societal disruptions.	3,4
4	To sensitize towards issues related to 'Indian' culture, tradition and its composite character.	3,4
5	To acquaint with Indian Knowledge System, Indian perspective of modern scientific world-view and basic principles of Yoga and holistic health care system.	5,6

2020-21/V/Strength of Materials/KME 502		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Understand the concept of stress and strain under different conditions of loading	2
2	Determine the principal stresses and strains in structural members	3
3	Determine the stresses and strains in the members subjected to axial, bending and torsional loads	3
4	Apply the concepts of stresses and strain in solving problems related to springs, columns and pressure vessels,	3
5	Calculate the slope, deflection and buckling of loaded members	3
	Analyze the stresses developed in straight and curved beams of different cross sections	3

2020-21/V/Heat and Mass Transfer/KME 501/RME 502		
S. No.	Course Outcome	BL
Student will be able to:-		
1	understand and implement the basic laws and mechanism of different mode of heat transfer and differential governing equations for conduction.	1,2
2	analyze and evaluate heat transfer through Fins and understand the transient heat conduction.	3,4
3	analyze heat transfer through convection for different type of surface and also understand the difference between natural and forced convection.	1,3,4
4	understand and remember the basic laws, principles of radiation and implement them for the evaluation of equations and problems of heat transfer through radiations.	2,3,4
5	understand the heat exchanger analysis and also remember the phenomenon of condensation, boiling and fundamentals of mass transfer.	3,4

2020-21/V/Heat and Mass Transfer Lab/KME 551/RME 552		
S. No.	Course Outcome	BL
Student will be able to:-		
1	To understand the basic principle of conduction and convection and evaluate the amount of heat flow through rod in conduction and convection.	1,2,3
2	To understand the difference between the quantity of heat transfer between fluids and solid boundaries.	1,2
3	To remember the principle of combined heat transfer and evaluate the amount of heat exchanged between fluids flowing within heat exchangers.	2,3
4	To create the ability to carry out simple experimental work in irradiative heat and to understand its application.	6

2020-21/V/CIM/KME 051		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Understand the basic concepts of automation, computer numeric control	2
2	Understand the algorithms of line generation, circle generation, transformation, curve, surface modeling and solid modeling	2
3	Develop CNC program for simple operations	2,3
4	Understand group technology, computer aided process planning, flexible manufacturing, Industry 4.0, robotics	3
5	Understand information system and material handling in CIM environment, rapid prototyping	3

2020-21/V/Automobile Engines & Combustion/KAU 051		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Explain the working principle performance parameters and testing of IC engine.	2
2	Understand the phenomena of combustion and its application in SI and CI engines & Understand the essential system of IC engine.	1,2
3	Understand the effect of engine emission on the environment and human health and methods of reducing it.	1,2
4	Apply the concepts of thermodynamics to air standard cycles in IC engine.	3
5	Analyse the effect of various operating parameters on IC engine performance.	3,4

2020-21/V/Industrial Engineering/KME 503		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Understand the concept of production system, productivity, facility and process planning in various industries	1,2
2	Apply the various forecasting and project management techniques. .	2,3
3	Apply the concept of breakeven analysis, inventory control and resource utilization using queuing theory.	4,5
4	Apply principles of work study and ergonomics for design of work systems	4,5
5	Formulate mathematical models for optimal solution of industrial problems using linear programming approach	5

2020-21/V/Automotive Chassis and Suspension/KAU 052		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Understand different types of automotive chassis and frames used in automobiles.	1,2
2	Classify transmission and drive line components used in automobile.	2,4
3	Asses and compare the axles and types of steering system in automobile.	4,5
4	Illustrate the constructional features of barking, suspension system, wheels and tyres in automobile application	3,4
5	Analyse the recent advancements made in chassis components of automobile and the concepts of braking and steering system to design the same for automobile application	4,5

2020-21/V/Mechatronics Systems/KME 052		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Identify key elements of mechatronics and its representation by block diagram.	1,2
2	Understand the concept of sensors and use of interfacing systems.	1,2,4
3	Understand the concept and applications of different actuators	4,5
4	Illustrate various applications of mechatronic systems.	3,4
5	Develop PLC ladder programming and implementation in real life problem.	3,4,5

2020-21/VI/Advanced Welding/KME 055		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Understand the physics of arc welding process and various operating characteristics of welding power source.	2
2	Analyse various welding processes and their applications.	4
3	Apply heat flow in welding and physical metallurgy of weldments	3
4	Apply the knowledge of welding for repair & maintenance, along with the weldability of different materials.	3
5	Apply the concept of quality control and testing of weldments in industrial environment.	3

2020-21/VII/CAD/CAM/RME 701		
S. No.	Course Outcome	BL
Student will be able to:-		

1	Describe basic structure of Computer graphics, geometrical transformations and geometric modelling.	2
2	Understanding of graphic standards & data storage and finite element modelling.	2
3	Explain fundamental and advanced features of CNC machines.	2
4	Illustrate the fundamentals of robotics and QFD.	3
5	Illustrate Group Technology, Rapid prototyping and CIM concepts.	3

2020-21/VII/CAD/CAM Lab/RME 751		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Create complex geometries of machine components in sketcher mode.	6
2	Write programs to generate analytical and synthetic curves used in engineering practice.	6
3	Generate freeform shapes in part mode to visualize components.	6
4	Create complex engineering assemblies using appropriate assembly constraints.	6
5	Develop G and M codes for turning and milling components. Generate automated tool paths for a given engineering component.	6

2020-21/VII/Automobile Engineering/RME 702		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Apply the law of mechanics and able to perform basic calculations for rolling, air, gradient resistance, Gear ratio determination and have understanding about gear box.	1,2,3
2	Understand different types of Transmission System and steering geometry.	2
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.	2,3
4	Understand different types of electrical system and fuel supply system.	1,2
5	Study the emission norms apply worldwide, EVs and techniques to control the emissions, contamination in medicinal plant materials.	1,2

2020-21/VII/Automobile Engineering Lab/RME 752		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Conduct experiments to understand the configuration of different types of gear box.	1,2
2	Analyze the performance of four strokes CI and SI Engines.	5
3	Study and analyze the exhaust gases on gas analyzer experiment setup.	5
4	Conduct experiments to understand the working of different subsystems (i.e. braking system, ignition, differential mechanism and steering mechanism) of an automobile.	2,3
5	Conduct experiments to understand the different types of injection systems used in automobile.	5

2020-21/VII/Supply Chain Management/RME 072		
S. No.	Course Outcome	BL
Student will be able to:-		
1	The students will understand the supply chain management their performance, competitive and supply chain strategies, and understanding strategic fit and scope of strategic fit.	2
2	The students will be able to analyze the supply chain drivers and metrics and study the case study of Japan 7-Eleven Company.	4
3	Students will be able to apply the understanding of the planning demand and supply in a supply chain	3
4	Student will be able to analyze the network design in the supply chain.	4
5	Students will be able to evaluate the factors influencing logistics and decisions, benchmarking and performance measurement.	5

2020-21/VII/Operations Research/RME 075		
S. No.	Course Outcome	BL
Student will be able to:-		
1	To understand and develop operation research models and apply LPP method	2,3,4,5
2	To understand and apply the mathematical tools involved in transportation and assignment problems.	2,3,4,5
3	To evaluate the optimal strategy for games and optimal sequence for machines.	2,3,4,5
4	To understand and solve inventory control and simulation problems for practical purposes.	2,3,4,5
5	Analyze and solve Queuing and project management problems.	2,3,4,5

2020-21/VII/Power Plant Engineering/RME 071		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Understand, apply and analyse fuels, load estimation and power plant economics.	2,3,4,5
2	Analyse the working of different component of steam power plant.	2,3,4,5
3	Analyse the working of different component of diesel and gas turbine power plant.	2,3,4,5
4	Analyse the working of different component of nuclear and hydro power plant.	2,3,4,5
5	Analyse and evaluate different electrical system, instrument used in power plant and pollution during power generation.	2,3,4,5

2020-21/VII/Understanding the human being Comprehensively Human Aspiration and its Fulfillment/ROE 074		
S. No.	Course Outcome	BL
Student will be able to:-		
1	Identify basic human aspirations and their fulfillment through right understanding and different aspects of All-encompassing Resolution.	1,2,3,4,5
2	Acquire knowledge about role of human being in existence, activities, and potentialities of the self, awakening to activities of the Self and harmony from self to entire existence	1,2,3,4,5
3	Analyze and apply right understanding to identify the interconnectedness and co-existence inexistence.	1,2,3,4,5
4	Analyze and evaluate transformation in thoughts through knowledge and in expressions as humane conduct (behavior, work/participation) in the light of Resolution.	1,2,3,4,5
5	Demonstrate the understanding of human tradition and its components by expanding participation in a way leading to Universal human order.	1,2,3,4,5