Department of Mechanical Engineering

2018-19 COs

Course Name: Laser System and Application- ROE 033	C201	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C201.1	Understand the basic concepts of physics		2
C201.2	Apply and concepts and Analyse the problems of Quantum Physics		4
C201.3	Apply the basic law of physics in Laser system		3
C201.4	Understand types of Laser production		2
C201.5	Understand new application in engineering fields		2

Course Name: Environment & Ecology-RAS302	C 202	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C202.1	Understand the concept of environment and the impact of human activity on it.		2
C202.2	Understand various types of natural resources and types of energy resources.		2
C202.3	Evaluate impact of environmental pollution on man and to understand techniques that may abate current environmental issues.		5

C202.4	Understand the legal aspects and role of NGO's in environmental protection.	2

Course Name: Fluid Mechanics - RCE303	**C 203**	**Course Year:**	**2018 - 19**
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C203.1	Analyze the properties of fluid and pressure measurement techniques.		4
C203.2	Analyse different types of fluid flow.		4
C203.3	Apply the principles of fluid kinematics		3
C203.4	Analyze the concepts of fluid dynamics and boundary layer theory.		4
C203.5	Analyze the concept of forces on submerged bodies and dimensional analysis.		4

Course Name: Material Science - RME301	**C 204**	**Course Year:**	**2018 - 19**
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C204.1	Understand the fundamental of atomic structures and crystal imperfections and able to analyse the properties of ferrous and non-ferrous materials.		2
C204.2	Understand the method of material testing and able to evaluate mechanical properties using different testing methods.		5
C204.3	Analyze the microstructures properties and phase diagram of engineering materials.		4
C204.4	Understand the methods of heat treatment and also able to apply these methods to modify the materials properties.		3
C204.5	Understand properties of ceramic, plastic and composite materials and also able to analyze the application of these materials.		4

Course Name: Thermodynamics - RME302	C 205	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C205.1	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
C205.2	Understand and analyse the working of Refrigerator, Heat Pump and Heat Engine and application of second law of thermodynamic. Understand the Principle of Increase of Entropy and evaluate the Quality of Energy.		4
C205.3	Analyze the availability & Unavailability of thermal system, second law efficiency and various thermodynamics relations.		4
C205.4	Apply knowledge to solve problems related to steam, analyze p-V and T-s diagram and understand the psychometric processes.		3
C205.5	Analyze the refrigeration cycles, refrigerants and refrigeration systems.		4

Course Name: Mechanics of Solids - RME303	C 206	Course Year:	2018 – 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C206.1	Analyze the effect of applied load on the solid body under various loading conditions		4
C206.2	Evaluate the stresses and deflection by various methods on beams and shafts		5
C206.3	Analyse spring and column under various loading conditions		4
C206.4	Analyze the stresses developed in pressure vessels		4
C206.5	Apply the concept of bending stresses on curved and unsymmetrical beams		3

Course Name: Fluid Mechanics Lab - RCE353	C 207	Course Year:	2018 – 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C207.1	Apply the principle of metacentric height to check the stability of floating bodies		3
C207.2	Apply the momentum equation by using the impact of jet experiment		3
C207.3	Analyze the pracitcal application of orificemeter and venturimeter		4
C207.4	Understand the major and minor losses in commercial pipe.		2
C207.5	Analyse the Bernoulii's theorem and Reynold's experiment.		4

Course Name: Material Sc. & Testing Lab -RME351	C 208	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C208.1	Test the mechanical properties of material on Universal testing machine and also able to analyse test results.		4
C208.2	Evaluate materials' hardness and also able to analyse effect of different processes on hardness.		5
C208.3	Evaluate the toughness of materials by izod and charpy test.		5
C208.4	Identify the micro structure of different materials and also be able to analyse the effect of heat treatment on the same.		4
C208.5	Evaluate the modulus rigidity through torsion test and able to analyse fatigue failure of the material using Fatigue test.		5

Course Name: Thermodynamics Lab - RME352	C 209	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C209.1	Understand the construction and working of fire tube and water tube boilers, their parts, differences, mountings and accessories.		2
C209.2	Understand the construction and working of two-stroke, four-stroke petrol and diesel engines, their parts, working strokes and applications.		2
C209.3	Understand the construction and working of steam engine, its components and the modified Rankine cycle.		2
C209.4	Understand the construction and working of the steam turbines, its types, differences between impulse & reaction turbine and the compounding of impulse turbines.		2
C209.5	Understand the construction and working of gas turbine and its types, working and process of Brayton's cycle.		2

Course Name: Computer Aided Machine Drawing-I Lab–RME353	C 210	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C210.1	Understand the different types of Engineering Drawing and BIS Codes		2
C210.2	Understand the interchangeability system and its requirement in machine drawing		2
C210.3	Analysis the fasteners and Joints such as Rivet, Pin joints, nut and bolts		4
C210.4	Interpret and understand sketching the different machine components analysis on drawing software.		2
C210.5	Understand the sketching part Modelling & Assemblies.		2

Course Name: Mathematics III - RAS 401		C 211	Course Year:	2018 - 19
Sr. No	**Course Outcomes**			**BL**
Students will be able to:				
C211.1	Determine the derivative and integral of complex valued function, also have the idea of singularities and calculate the residue of complex variable function.			4
C211.2	Determine the moments of discrete and continous probability functions, the concept of curve fitting, to fit the data by linear and non-linear curves and they learn to solve the problem related to discrete and continuous probability distribution function.			4
C211.3	Analyze the methods of finding the root of algebraic and transcendental equation and also the concept of finding the interpolating polynomial.			4
C211.4	Understand the concept of definite integral of the function, also the concept of solving ordinary differential equation of first and second order by usinginitial conditions.			2
C211.5	Determine the fourier integral of a function, also learn the concept of the Z transform of a given function to determinethe solution of difference equation.			4

Course Name: Universal Human Values & Professional Ethics -RVE401	C 212	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
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: Electrical Machines & Controls -REE409	C 213	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C213.1	Apply the knowledge in constructional details, principle of operation, performance of tran		3
C213.2	Apply the knowledge in constructional details, principle of operation, performance of Ind		3
C213.3	Analyze the concepts in Modeling of Mechanical System, Open loop and Closed loop syste		4
C213.4	Determine the time response analysis and evaluate the stability using Routh-Hurwitz's Cri		4
C213.5	Test the stability of linear time-invariant systems in time domain using Routh Hurwitz crit		4

Course Name: Measurement & Metrology –RME401	C 214	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C214.1	Apply different principals of metrology in instrument used for quality inspection.		3
C214.2	Apply the use of sensors and transducers in industry.		3
C214.3	Evaluate the use of limits and tolerances over any dimension.		5
C214.4	Analyze the working of different measuring instruments.		4
C214.5	Evaluate the surface finishing methods		5

Course Name: Mfg. Sc. & Tech. I–RME402	C 215	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C215.1	Understand the fundamentals of manufacturing processes and analysis of forging		2
C215.2	Analysis of various metal forming operations.		4
C215.3	Analysis of various sheet metal operations.		4
C215.4	Application and justification of different casting processes.		3
C215.5	Understand various modern manufacturing process, tools and techniques.		2

Course Name: Applied Thermodynamics –RME403	C 216	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C216.1	Analyse the basic power cycles and performance of I.C engines		4
C216.2	Analyze the process of combustion of fuel and formation of flue gases.		4
C216.3	Understand the working and performance of boiler, draught and condenser.		2
C216.4	Analyse the design and working of nozzles and steam turbines.		4
C216.5	Understand the principle, working & performance of gas turbines and jet propulsion.		2

Course Name: Electrical Machines & Controls Lab -REE459	C 217	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C217.1	Understand and apply the knowledge to find parameters to predict the performance of DC machine	3
C217.2	Apply the knowledge to find parameters to predict the efficiency and voltage regulation of transformer	3
C217.3	Analyze the parameters to predict the performance of Induction machine and find voltage regulation of an alternator	4
C217.4	Understand the concept of change of excitation of alternator and plot the V-Curves	2
C217.5	Understand the concepts of Control Systems Engineering and apply them to controlling of dc machines	2

Course Name: Measurement & Metrology Lab –RME451	C 218	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C218.1	Conduct experiments by using linear and angular measuring instruments effectively.	2
C218.2	Understand the use of limits, fits and tolerance for designing purposes.	2
C218.3	Apply the law of physics to conduct the experiments with the use of pressure and force measuring instruments.	3
C218.4	Conduct experiments to validate non-contact behavior by stroboscope for speed measurement instruments effectively.	3
C218.5	Use optical instruments to conduct experiments for shape and size measurement of different components.	3

Course Name: Manufacturing Sc. & Tech. i–RME452	C 219	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C219.1	Conduct and analyze sand testing and metal casting	4
C219.2	Understand and perform hand forging and power forging operations.	2
C219.3	Analyze and perform wire drawing, tube bending and press working operations	4
C219.4	Understand and make plastic components by injection moulding.	2

Course Name: Computer Aided Machine Drawing-II Lab–RME453	C 220	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C220.1	Understand the different types of Engineering Drawing and BIS Codes.	2
C220.2	Analyze the interchangeability system and its requirement in machine drawing.	4
C220.3	Understand and drafting the 2D/3D machine and allied component.	2
C220.4	Interpret and understand sketching the different machine components analysis on drawing software.	4
C220.5	Understand the sketching in part Modelling & Assemblies.	2

Course Name: Managerial Economics- RAS 501	C301	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C301.1	Understand the basic concept of demand and its nature in economics.	2
C301.2	Understand the supply and its decisive factors responsible for demand forecasting.	2
C301.3	Analyze the concept of cost -output relationships in short run, long run and break even point.	4
C301.4	Understand the concept of different market structures.	2
C301.5	Understand the concept of Indian economy, its nature & characteristics and business cycle in national income calculations.	2

Course Name: Cyber Security RUC 501	C 302	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C302.1	Describe and analyze the hardware, software, components of a network and the interrelations.	4
C302.2	Explain the concepts of confidentiality, availability and integrity in Information Assurance, including physical, software, devices, policies and people. Analyze these factors in an existing system and design implementations.	2
C302.3	Develop solutions for networking and security problems, balancing business concerns, technical issues and security and apply them to various situations, classifying networks, analyzing performance and implementing new technologies.	5
C302.4	Identify infrastructure components and the roles they serve, and design infrastructure including devices, security policies, systems software, management and security and analyze performance of enterprise network systems.	4
C302.5	Use appropriate resources to stay abreast of the latest industry tools, cyber laws and techniques analyzing the impact on existing systems and applying to future situations and effectively communicate technical information verbally, in writing, and in the form of case study.	4

Course Name: Machine Design I –RME501	C 303	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C303.1	Understand the design fundamentals and theories of failure.		2
C303.2	Understand the machine components under fluctuating loads and riveted joints.		2
C303.3	Apply the bending and torsion theory on the shaft subjected to static and fluctuating used in various machines.		3
C303.4	Analyze the mechanical springs used in various machines.		4
C303.5	Design the keys and coupling and power screws used in various machines.		5

Course Name: Heat & Mass Transfer –RME502	C 304	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C304.1	Analyze the basic laws and mechanism of different mode of heat transfer and differential governing equations for conduction.		4
C304.2	Evaluate amount of heat transfer through Fins and understand the transient heat conduction.		5
C304.3	Analyze heat transfer through convection for different type of surface and also understand the difference between natural and forced convection.		4
C304.4	Analyze the basic laws and principles of radiation and implement them for the evaluation of equations and problems of heat transfer through radiations.		4
C304.5	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: Mfg. Sc. & Tech. II –RME503	C 305	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C305.1	Analyze the basic concepts of theory of metal cutting		4
C305.2	Understand the construction & operations performed on various machine tools.		2
C305.3	Understand the principle of grinding and different types of super finishing operations.		2
C305.4	Analyze different welding and allied processes with their thermodynamic and metallurgical aspects.		4
C305.5	Understand the concepts of advanced machining and welding processes.		2

Course Name: IC Engines & Compressors –RME051	C 306	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C306.1	Understand the basic concept of IC Engine and air standard cycles.		2
C306.2	Analyze combustion phenomena, carburetion system and concepts of ignition for S.I engine.		4
C306.3	Analyze the combustion phenomena, fuel injection for C.I engine and emission.		4
C306.4	Analyze the cooling, lubrication systems and fuels of IC Engines.		4
C306.5	Understand the working of reciprocating and rotary type of compressors.		2

Course Name: Mechatronics &Microprocessor –RME052	C 307	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C307.1	Understanding the basics concepts of mechatronics and the mechanical elements used in mechatronics system.	2
C307.2	Knowledge of the various electronic and computing elements used inmechatronics.	1
C307.3	Understanding the system modelling and analysis and the use of different typesof actuators.	2
C307.4	Knowledge of the various types of actuators and the stages in the design of mechatronics system.	1
C307.5	Knowledge of the various applications of Mechatronics.	1

Course Name: Design & Simulation Lab I–RME551	C 308	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C308.1	Understand the design of cotter & knuckle joint.	2
C308.2	Analyze rivet joint for boilers.	4
C308.3	Evaluate dia of the shaft for combined loading for given application..	5
C308.4	Understand and design coupling & keys for given application.	2
C308.5	Apply theory of strength of material in design sprigs & screw jack for given application	3

Course Name: Heat & Mass Transfer Lab –RME552	C 309	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C309.1	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
C309.2	Analyze the comparative study about the quantity of heat transfer between fluids and solid boundaries.	4
C309.3	Summarize the principle of combined heat transfer and evaluate the amount of heat exchanged between fluids flowing within heat exchangers.	4
C309.4	Built the ability to carry out simple experimental work in irradiative heat and to understand its application.	5

Course Name: Mfg. Sc. & Tech. II Lab –RME553	C 310	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C310.1	Understand the different operations on lathe machine.	2
C310.2	Apply work on a milling machine.	3
C310.3	Understand the work on a shaper machine.	2
C310.4	Analyse work on various welding techniques.	4

Course Name: Seminar –RME559	C 311	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C311.1	Deliver the ideas towards industrial exposure and implement that to enhance their personality.		3
C311.2	Analyze and enhance their knowledge with the recent trends in technological developments taking place in the field of their own interest.		4
C311.3	Create own models based on their industrial knowledge and get familiar with multidisciplinary technologies.		6
C311.4	Analyze about the expose himself in the topics relates to beyond curriculum and also remember professional ethics.		4

Course Name: Industrial Management - RAS 601	C 312	Course Year:	2020-21
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C312.1	Understand the fundamentals of industrial management, business enterprisesand production system.		2
C312.2	Understand the principles of management and human resource management.		2
C312.3	Analyze inventory models and understand work study.		4
C312.4	Analyze the concepts of quality, quality control tools, total quality management.		4
C312.5	Analyze project management.		4

Course Name: Sociology-RAS 602	C 313	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C313.1	To provide students with an overview of industrial sociology and various theories of organization structure.	1
C313.2	To gain an insight into development and consequences of industrialisation along with productive structure.	3
C313.3	To get the students acquainted with basic industrial policies in India and how Science & technology is shaping out the business world.	3
C313.4	To have a basic understanding of contemporary issues in industries like grievance, industrial disputes, collective bargaining etc. with their resolution	2
C313.5	To enable student in visualising future in industry with reference to Cultural issues, consumer society and sociological concerns.	3

Course Name: Fluid Machinery	C 314	Course Year:	2020-21

Sr. No	Course Outcomes	BL
Students will be able to:		
C314.1	Understand and apply the concept of momentum and Euler's equation on Impulse turbine	2
C314.2	Understand the working principle of reaction turbines and design the parts of reaction turbine.	2
C314.3	Understand the working principle of centrifugal pump and Evaluate the performance characteristics of centrifugal pump.	2
C314.4	Understand the working principle of reciprocating pump and Evaluate the performance characteristics of reciprocating pump	2
C314.5	Understand the working principle of hydraulic machines such as hydraulic ram, lift, press, torque converter and evaluate their performance.	2

Course Name: Theory of Machine –RME602	C 315	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C315.1	Calculate velocity and acceleration for 4bar and slider crank mechanism.		4
C315.2	Develop cam profiles for different motion of followers and apply the concepts of gears.		5
C315.3	Apply the static and dynamic force analysis of four bar mechanism and slider crank mechanism		3
C315.4	Apply the concept of static and dynamic balancing and principles of governors.		3
C315.5	Apply the principle of brakes, dynamometer and gyroscope and understand it's working.		3

Course Name: Machine Design II –RME603	C 316	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C316.1	Design spur gear and helical gears for given application and able to analyze the same.		6
C316.2	Design of Bevel gear and Worm Derive for given application and able to analyze the same.		6
C316.3	Design different sliding contact bearing and also be able to analyze the same for given application.		6
C316.4	Analyze the required specification of rolling contact bearing and also able to select correct bearing for the application.		3
C316.5	Design I.C. engine parts by analysing I.C engine specifications as per requirement.		6

Course Name: RAC–RME061	C 317	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
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	Understand the working of different refrigeration and air-conditioning equipment.	2

Course Name: PPC –RME062	C 318	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C318.1	Understand the concept of production system and preplanning of production planning and control	2
C318.2	Analyse the various characteristics of production planning.	4
C318.3	Apply the various characteristics of production control	3
C318.4	Apply the concepts of evaluation and analysis (CPM/PERT) techniques.	3
C318.5	Understand the concepts of material planning and control.	2

Course Name: Fluid Machinery Lab –RME651	C 319	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C319.1	Understand the working principle of Pelton Wheel and analyze the performance.		**4**
C319.2	Analyze the performance of Francis turbine and Kaplan Turbine and evaluate their efficiency.		**5**
C319.3	Analyze the performance of centrifugal Pump and evaluate the efficiency.		**5**
C319.4	Analyze the performance of Reciprocating Pump and evaluate the efficiency		**5**
C319.5	Analyze the performance of Reciprocating Pump and evaluate the efficiency		**5**

Course Name: TOM Lab –RME652	C 320	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C320.1	Demonstrate various mechanisms, their inversions and brake and clutches in automobile		**4**
C320.2	Apply cam follower mechanism to get desired motion of follower.		**3**
C320.3	Apply the concepts of gears and gear train to get desired velocity ratio for power transmission.		**3**
C320.4	Apply the concept of governors to control the fuel supply in engine.		**3**
C320.5	Determine the balancing load in static and dynamic balancing problem		**4**

Course Name: Design & Simulation Lab II –RME653	C 321	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C321.1	Understand the basic programming skill in c or c++.	2
C321.2	Create computer program for basic design problems.	6
C321.3	Develop computer program for designing of gears.	6
C321.4	Develop computer program for designing of journal bearing and selection of ball bearing.	6
C321.5	Apply engineering knowledge to solve a real life problem for the complete design of a sub-system/system.	3

Course Name: RAC Lab–RME654	C 322	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C322.1	Demonstrate the working of refrigeration and air-conditioning systems and its various components.	2
C322.2	Analyze the performance parameters of refrigeration and air-conditioning systems.	4
C322.3	Analyze the performance parameters of two stage air compressor.	4
C322.4	Analyze the performance parameters of an air Washer.	4

Course Name: Operations Research– NME073	C 401	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C401.1	Develop operation research models and apply LPP method.	5
C401.2	Apply the mathematical tools involved in transportation and assignmentproblems.	3
C401.3	Apply various optimization techniques to solve network problems.	3
C401.4	Evaluate optimal strategy for games and apply queuing theories for practical purpose	5
C401.5	Solve inventory control and replacement problem for practical purposes.	4

Course Name: CAD– NME701	C 402	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C402.1	Understand the fundamentals of CAD/CAM/CAE and different graphics Input-output devices.	2
C402.2	Analyze the appropriate engineering computer graphics and geometric behavior techniques for mechanical engineering applications.	4
C402.3	Apply the concept of advanced modeling and computational tools for complex part shape design.	3
C402.4	Apply the design software for Surface and solid modeling.	3
C402.5	Apply the concept of FEM techniques for the solution of complex engineering problems.	3

Course Name: Automobile Engg– NME702	C 403	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C403.1	Apply the law of mechanics to perform basic calculations for rolling, air, gradient resistance, Gear ratio determination and have understanding about gear box.		3
C403.2	Understand different types of Transmission System and steering geometry		2
C403.3	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
C403.4	Analyze different types of electrical system and fuel supply system.		4
C403.5	Study the emission norms apply worldwide, EVs and techniques to control the emissions, contamination in medicinal plant materials.		2

Course Name: CAM– NME031	C 404	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C404.1	Understand the functioning of automated manufacturing system.		2
C404.2	Understand the classification and working of NC systems.		2
C404.3	Apply the working of system devices.		3
C404.4	Analyse the application of part programming		4
C404.5	Understand the CIM, robotics & it's working along with artificial intelligence		2

Course Name: TQM–NME041	C 405	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C405.1	Understand the concept of quality and total quality management	2
C405.2	Understand the role of organization structure towards quality.	2
C405.3	Analyze various statistical quality control techniques.	4
C405.4	Analyze defects, diagnosis, reliability and maintainability.	4
C405.5	Understand ISO and optimization techniques	2

Course Name: CAD/CAM Lab –NME751	C 406	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
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: I.C Engine & Automobile Engg. Lab –NME752	C 407	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C407.1	Conduct experiments to understand the configuration of different types of gear box.		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.		2
C407.5	Conduct experiments to understand the different types of injection systems used in automobile.		2

Course Name: Ind Trg–NME753	C 408	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
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 –NME754	C 409	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C409.1	Understand methods and materials and their selection to carry out experiments.		2
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: NCER – NOE081	C 410	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
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: AWT– NME055	C 411	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C411.1	Understand the physics of arc welding process and various operating characteristics of welding power source.	2
C411.2	Understand various welding processes and their applications.	2
C411.3	Apply heat flow in welding and physical metallurgy of weldments.	3
C411.4	Understand the knowledge of welding for repair & maintenance, along with the weldability of different materials.	2
C411.5	Understand the concept of weld design and testing of weldments in industrial environment.	2

Course Name: NDT– NME065	C 412	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C412.1	Apply the concept of visual inspection method in detecting surface defects.	3
C412.2	Apply the concept of penetrant testing method and magnetic particle testing method for detecting surface and sub-surface flaws.	3
C412.3	Apply the concept of radiographic testing method for detecting internal defects.	3
C412.4	Apply the principles of Ultrasonic testing in medical and engineering areas for detecting internal flaws.	3
C412.5	Apply the concept of eddy current testing method for detecting flaws.	3

Course Name: PPE– NME801	C 413	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C413.1	Analyze fuels, load estimation and power plant economics.		4
C413.2	Analyze the working of different components of steam power plant.		4
C413.3	Analyze the working of different components of diesel and gas turbine power plant.		4
C413.4	Apply the working of different components of nuclear, hydro and various nonconventional power plants.		3
C413.5	Understand different electrical system, instruments used in power plants and pollution during power generation.		2

Course Name: Seminar– NME851	C 414	Course Year:	2018 - 19
Sr. No	**Course Outcomes**		**BL**
Students will be able to:			
C414.1	Deliver the ideas towards industrial exposure and implement that to enhance their personality.		2
C414.2	Analyze and enhance their knowledge with the recent trends in technological developments taking place in the field of their own interest.		4
C414.3	Create own models based on their industrial knowledge and get familiar with multidisciplinary technologies.		6
C414.4	Analyze about the expose himself in the topics relates to beyond curriculum and also remember professional ethics.		4

Course Name: Project –NME852	C 415	Course Year:	2018 - 19

Sr. No	Course Outcomes	BL
Students will be able to:		
C415.1	Understand methods and materials and their selection to carry out experiments.	2
C415.2	Apply the procedures with a concern for society, environment and ethics.	3
C415.3	Analyze and discuss the results to draw valid conclusions.	4
C415.4	Create a report as per recommended format and defend the work.	6
C415.5	Evaluate the possibility of publishing papers in peer-reviewed journal/conference proceedings.	5