Course Outcomes (II Year) Even Sem 2018-19		
Course Name: Mathematics-III		
CO	**Course Outcome**	**Taxonomy**
C211.1	Solve linear system of equations and calculate the Eigen values and Eigen vectors of the given square matrices.	Apply
C211.2	Apply Cayley – Hamilton theorem to find the inverse and powers of a square matrix. Discuss the nature of the quadratic form.	Apply
C211.3	Use the numerical techniques find solution of algebraic and transcendental Equations.	Apply
C211.4	Estimate the interpolating value of the function using Numerical techniques.	Evaluate
C211.5	Construct the best fit of curves for the given data and Evaluate define integrals using Newton cotes Formula.	Apply
C211.6	Utilize numerical methods to find numerical solution of ordinary and partial differential equations.	Apply
Course Name: Managerial Economics & Financial Analysis		
CO	**Course Outcome**	**Taxonomy**
C212.1	Explain the role and responsibilities of a managerial economist in modern business scenario.	Understand
C212.2	Predict the demand of a product by using demand forecasting methods.	Apply
C212.3	Calculate the Break Even Point (BEP) with the help of production and cost analysis.	Apply
C212.4	Explain their learning about competitive markets and business economic environment.	Understand
C212.5	Prepare the financial statements and analyze financial position of the firm.	Apply
C212.6	Discuss the sources of capital and allocation of funds for business undertaking.	Understand
Course Name: Mechanics of Solids		
CO	**Course Outcome**	**Taxonomy**
C213.1	Determine the stresses and strains in structural members subjected to various loads.	Apply
C213.2	Draw the shear force and bending moment diagrams for beams	Apply
C213.3	Estimate the stresses induced in beams subjected to flexural loads	Apply
C213.4	Design shafts subjected to torsion based on strength and rigidity	Apply
C213.5	Calculate the deflections in beams subjected to transverse loads.	Apply
C213.6	Estimate the stresses induced in thin and thick cylinders subjected to fluid pressure	Apply
Course Name: Engineering Drawing for Mechanical Engineers		
CO	**Course Outcome**	**Taxonomy**
C214.1	Sketch the sections of solids.	Apply
C214.2	Sketch the sectional true shapes of solids and its developments.	Apply
C214.3	Sketch the sectional isometric drawings.	Apply
C214.4	Sketch the orthographic views of pictorial views.	Apply
C214.5	Sketch the interpenetration of solids for industrial components.	Apply
C214.6	Sketch the perspective projections.	Apply
Course Name: Engineering Mechanics		
CO	**Course Outcome**	**Taxonomy**

C215.1	Describe the basic concepts of various types of system of forces and couple.	Understand
C215.2	Analyse free body diagrams and concurrent and non concurrent forces at equilibrium condition.	Analyse
C215.3	Solve different types of friction problems.	Apply
C215.4	Determine the centroid, centre of gravity of composite figures and mass moment of inertia for solid bodies.	Apply
C215.5	Apply the principles of rectilinear and curvilinear motion to rigid bodies.	Apply
C215.6	Analyse the perfect frames and concepts of mechanical vibrations.	Analyse
Course Name: Thermodynamics		
CO	**Course Outcome**	**Taxonomy**
C216.1	Explain the concepts of thermodynamic systems, state, properties, processes, work transfer and heat transfer.	Understand
C216.2	Estimate the thermodynamic properties of substances at a given state using the tables or equations of state.	Evaluate
C216.3	Analyze systems using first law and second law of thermodynamics.	Analyse
C216.4	Predict the performance of power generation systems and heat pumps based on cycles.	Apply
C216.5	Estimate the quality of energy transferred through thermodynamic systems.	Evaluate
C216.6	Solve problems of air standard cycles for performance using a systematic approach.	Apply
Course Name: Mechanics of Solids Laboratory		
CO	**Course Outcome**	**Taxonomy**
C217.1	Determine Young's Modulus of solids under tensile & compressive loads.	Apply
C217.2	Calculate the Young's Modulus of beams under bending loads.	Apply
C217.3	Determine the shear modulus of solids under torsional loads.	Apply
C217.4	Calculate the strength of solids under impact loads.	Apply
C217.5	Evaluate the behaviour of helical springs under static loads.	Evaluate
C217.6	Estimate the hardness of solids under gradual loads.	Evaluate
Course Name: Computer Aided Drafting Laboratory		
CO	**Course Outcome**	**Taxonomy**
C218.1	Demonstrate CAD tools for 2D & 3D drawings of Mechanical Components by using drafting packages.	Apply
C218.2	Describe the principles of computer aided designing, geometric modelling, solid modelling.	Understand
C218.3	Sketch the 2D part drawings in the work bench.	Apply
C218.4	Construct the 3D drawings and isometric views of machine components.	Apply
C218.5	Model the 3D drawings into orthographic views of simple parts.	Apply
C218.6	Model the perspective views of a 2D and 3D objects.	Apply

Course Outcomes (III Year) Even Sem 2018-19		
Course Name: Operations Research		
CO	**Course Outcome**	**Taxonomy**
C321.1	Formulate the mathematical models and obtain optimum solution using graphical method and simplex method.	Apply
C321.2	Solve the Linear Programming Problem by Big-M, Two- Phase Techniques and in duality method.	Apply
C321.3	Determine the Optimal solution in Transportation Problems and Assignment Problems.	Apply
C321.4	Choose the best strategy for successfully face the competition and identifying the suitable Queuing Model.	Apply
C321.5	Solve the n-jobs-2-machines, 3-machines and estimate the project completion time by PERT & CPM Techniques.	Apply
C321.6	Solve complex problems by Dynamic Programming Techniques and explain various types of maintenance, economic replacement policies.	Apply
Course Name: Design of Machine Members-II		
CO	**Course Outcome**	**Taxonomy**
C322.1	Design curved beam machine elements like crane hooks, C-clamps, machine frames.	Apply
C322.2	Describe various concepts of design of power transmission elements.	Understand
C322.3	Design helical springs for two wheel vehicle and laminated springs for trucks.	Apply
C322.4	Design various types of rolling contact bearings and sliding contact bearings.	Apply
C322.5	Design spur and helical gears for different input conditions.	Apply
C322.6	Analyze the forces acting and the failure criteria to be adopted for various IC engine parts.	Analyse
Course Name: Heat Transfer		
CO	**Course Outcome**	**Taxonomy**
C323.1	Quantify the rate of heat transfer through simple geometries under steady and unsteady state conditions.	Apply
C323.2	Estimate the rate of heat transfer from finned surfaces and the time of cooling or heating in transient heat conductions.	Apply
C323.3	Compute the heat transfer coefficients for internal and external flows under free and forced convective conditions.	Apply
C323.4	Predict the heat transfer coefficients for boiling and condensation heat transfer.	Apply
C323.5	Design a heat exchanger using LMTD or NTU- Ɛ methods.	Apply
C323.6	Calculate the radiation heat exchange between the surfaces and interpret the significance of radiation shields.	Apply
Course Name: Finite Element Method		
CO	**Course Outcome**	**Taxonomy**
C324.1	Explain the approaches for solving FEM problems in different fields.	Understand
C324.2	Formulate FEM model for bars and trusses to develop stiffness matrices and load vectors.	Apply
C324.3	Predict stresses in beams and frames using FEM.	Apply

C324.4	Write interpolation functions to higher order iso parametric elements.	Apply
C324.5	Solve the stress in Axis symmetric triangular elements and apply finite element applications in solid mechanics.	Apply
C324.6	Solve the 2D heat transfer and fluid mechanics problems using FEM.	Apply
Course Name: Metal Forming Process		
CO	**Course Outcome**	**Taxonomy**
C325.1	Describe the concept of yield criteria applicable to different material deformation processes.	Understand
C325.2	Analyse effect of parameters influencing metal forming and compare hot working and cold working with applications	Analyse
C325.3	Explain characteristics of bulk metal forming processes and sheet metal work.	Understand
C325.4	List out the different types of defects, causes and remedial measures in metal forming processes.	Understand
C325.5	Analyze the variables influencing the manufacture of wires and rods	Analyse
C325.6	Explain the various techniques used in additive manufacturing.	Understand
Course Name: Non Conventional Energy Resources		
CO	**Course Outcome**	**Taxonomy**
C326.1	Explain the significance of renewable energy sources in the context of Indian requirement.	Understand
C326.2	Explain the principle of measuring the solar radiation and Sun shine.	Understand
C326.3	Explain the working of various solar collectors.	Understand
C326.4	Demonstrates the methods of solar energy storage.	Understand
C326.5	Describe the principles of conversion of Bio-mass and geothermal energy for power generation.	Understand
C326.6	Explain the methods of direct energy conversion systems.	Understand
Course Name: Heat Transfer Laboratory		
CO	**Course Outcome**	**Taxonomy**
C327.1	Estimate the Heat Transfer coefficient for conductive mode of Heat Transfer.	Apply
C327.2	Estimate the Heat Transfer coefficient for convective mode of Heat Transfer.	Apply
C327.3	Evaluate the emission characteristics of grey bodies.	Evaluate
C327.4	Determine the Stefan Boltzmann constant for radiation Heat Transfer.	Apply
C327.5	Estimate the performance characteristics of heat exchangers.	Apply
C327.6	Predict the heat transfer coefficient for drop wise and film wise condensation.	Apply
Course Name: Computer Aided Engineering Laboratory		
CO	**Course Outcome**	**Taxonomy**
C328.1	Demonstrate the knowledge on various simulation software's.	Understand
C328.2	Analyse the structural components of various bars and beams.	Analyse
C328.3	Illustrate the thermal analysis of 2D components and composite wall.	Analyse
C328.4	Illustrate the couple field analysis of 2D components and composite wall.	Analyse
C328.5	Solve the fluid flow problems by using computational fluid dynamics.	Apply
C328.6	Evaluate the various research problems in all the fields of engineering by using FEA.	Evaluate

Course Outcomes (IV Year) Even Sem 2018-19		
Course Name: Industrial Engineering		
CO	**Course Outcome**	**Taxonomy**
C421.1	Define management functions and organisational structures	Understand
C421.2	Use the knowledge of management tools to apply in technical organizations.	Apply
C421.3	Apply work study techniques towards productivity improvement	Apply
C421.4	Apply selected techniques for control and management of inventory	Analyse
C421.5	Design a simple sampling plan and evaluate its effectiveness for a given sampling process	Apply
C421.6	Use TQM circles to find solutions to problems in industry towards continuous improvement in the system	Apply
Course Name: Power Plant Engineering		
CO	**Course Outcome**	**Taxonomy**
C422.1	Explain the working of various components of power plant.	Understand
C422.2	Quantify the efficiencies of steam power cycles.	Apply
C422.3	Discuss the working principles of gas turbine and diesel engine power plants.	Understand
C422.4	Explain the working of hydroelectric and nuclear power plants.	Understand
C422.5	Identify the different non-conventional energy sources and their utilization.	Understand
C422.6	Explain the impact of power plant effluents on environment.	Understand