



DR.T.THIMMAIAH INSTITUTE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING

F.No:DrTTIT/IQAC/2020-21/075L

Semester: 3

Scheme:-2018

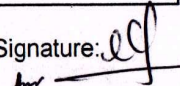
Course -1: Transform Calculus, Fourier Series and Numerical Techniques

Course -1 Code: 18MAT31

Course Outcomes: After studying this course, the students will be able to:

CO-1	Use laplace transforms and inverse laplace transforms in solving differential or integral equations arising in network analysis and control systems and other fields of engineering
CO-2	Demonstrate fourier series to study the behaviour of periodic functions and their applications in system communication digital signal processing and field theory.
CO-3	Make use of fourier transform and z transform to illustrate discrete or continuous function arising in wave and heat propagation, signals and systems.
CO-4	Solve first and second order ODE arising in engineering problems using single step and multi step numerical methods.
CO-5	Determine the external of functionals using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis.

Course Instructor: MANJUNATHA S

Signature: 


Course -2: Mechanics of Materials

Course -2 Code: 18ME32

Course Outcomes: After studying this course, the students will be able to:

CO-1	Describe simple, compound, thermal stresses and strains, their relations and strain energy
CO-2	Interpret and compute the stresses, strains and deformations in structural members
CO-3	Sketch the shear force and bending moment variation for statically determinate beams
CO-4	Analyze the solid and hollow circular shafts subjected to torque
CO-5	Analyze short and long columns for stability

Course Instructor: Dr.P.D.Sudersanan

Signature: 

Course -3: Basic Thermodynamics

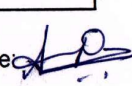
Course -3 Code: 18ME33

Course Outcomes: After studying this course, the students will be able to:

CO-1	Explain fundamentals of thermodynamics and evaluate energy interactions across the boundary of the thermodynamic systems
CO-2	Evaluate the feasibility of cyclic and noncyclic processes using 2nd law of thermodynamics.
CO-3	Apply the knowledge of entropy, reversibility and irreversibility to solve numerical problems and apply 1st law of thermodynamics to closed and open systems and determine quantity of energy transfers and change in properties
CO-4	Interpret the behavior of pure substances and its application in practical problems.
CO-5	Recognise differences between ideal and real gases and evaluate thermodynamic properties of ideal and real gas mixtures using various relations.

Course Instructor: SHA

Head of the Department
Dept. of Mechanical Engineering

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Course Outcomes: After studying this course, the students will be able to:

CO-1	THE FOUNDATION FOR UNDERSTANDING THE STRUCTURE AND BEHAVIOUR OF MATERIALS COMMON IN MECHANICAL ENGINEERING
CO-2	IMPART KNOWLEDGE OF VARIOUS FAILURE MODES OF MATERIALS
CO-3	TO UNDERSTAND MODIFICATIONS OF MATERIAL PROPERTIES BY HEAT TREATMENT PROCESS
CO-4	TO EXPLORE THE MECHANICAL PROPERTIES OF COMPOSITES
CO-5	TO EXPLORE THE MECHANICAL PROPERTIES OF METALS AND THEIR ALLOYS, POLYMERS, CERAMICS, SMART MATERIALS AND COMPOSITES

Course Instructor: Pruthvi H M

Signature: 

Course -5: Metal Cutting & Forming

Course -5 Code: 18ME35A

Course Outcomes: After studying this course, the students will be able to:

CO-1	Explain the construction & specification of various machine tools.
CO-2	Discuss different cutting tool materials, tool nomenclature & surface finish.
CO-3	Apply mechanics of machining process to evaluate machining time.
CO-4	Analyze tool wear mechanisms and equations to enhance tool life and minimize machining cost.
CO-5	Understand the concepts of different metal forming processes. & Apply the concepts of design of sheet metal dies to design different dies for simple sheet metal components.

Course Instructor: Manjunatha Babu N S

Signature: 

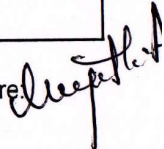
Course -6: CAMD

Course -6 Code: 18ME36A

Course Outcomes: After studying this course, the students will be able to:

CO-1	Analyse the drawings and convert 3D drgs to 2D views
CO-2	Recognize the importance of linking function and visualization aspects in the preparation of part drgs
CO-3	Apply limits and tolerances to parts and choose appropriate fit for the given assemblies
CO-4	prepare the part or assembly drgs using software
CO-5	

Course Instructor: SAMPATH A

Signature: 

Course -7: Material Testing Lab

Course -7 Code: 18MEL37

Course Outcomes: After studying this course, the students will be able to:

CO-1	Acquire experimentation skills in the field of material testing.
CO-2	Develop theoretical understanding of the mechanical properties of materials by performing experiments.
CO-3	Apply the knowledge to analyse a material failure and determine the failure inducing agent/s.
CO-4	Apply the knowledge of testing methods in related areas.
CO-5	Understand how to improve structure/behaviour of materials for various industrial applications.

Course Instructor: SAGAR S

Signature: 

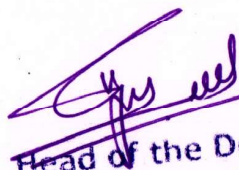
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Course Outcomes: After studying this course, the students will be able to:	
CO-1	Perform turning , facing , knurling , thread cutting, tapering , eccentric turning and allied operations
CO-2	Perform keyways / slots , grooves etc using shaper and gear tooth cutting using milling machine.
CO-3	Demonstrate precautions and safety norms followed in Machine Shop
CO-4	Exhibit interpersonal skills towards working in a team
CO-5	

Course Instructor: SAMPATH A

Signature: 

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Semester: 4

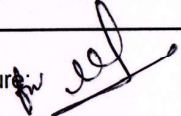
Scheme:-2018

Course -1: Complex analysis, probability and statistical methods

Course -1 Code: 18MAT41

Course Outcomes: After studying this course, the students will be able to:	
CO-1	Use the concept of analytic function and complex potential to solve the problems arising in electromagnetic field theory
CO-2	Utilize conformal transformation and complex integral arising in aerofoil theory
CO-3	Apply discrete and continuous probability distributions arising in engineering fields
CO-4	Make use of correlation regression analysis to fit suitable mathematical module for the statistical data
CO-5	Construct joint probability distribution and demonstrate validity of testing the hypothesis

Course Instructor: MANJUNATHA S


Signature: 

Course -2: ATD

Course -2 Code: 18ME42

Course Outcomes: After studying this course, the students will be able to:	
CO-1	Apply thermodynamic concepts to analyse the performance of gas power cycles.
CO-2	Apply the thermodynamic concepts to analyse the performance of vapour power cycles
CO-3	Understand combustion of fuels and performance of IC engines
CO-4	Understand the principles, applications and apply the concepts to determine the performance of refrigeration systems and air conditions systems
CO-5	Understand the working principles of air compressors and steam nozzles, applications relevance of air and identify methods for performance improvement.

Course Instructor: SHA

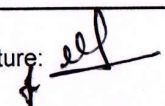
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Course -3: Fluid Mechanics

Course -3 Code: 18ME43

Course Outcomes: After studying this course, the students will be able to:	
CO-1	Identify and calculate the key fluid properties used in the analysis of fluid behavior
CO-2	Explain the principles of pressure, buoyancy and floatation
CO-3	Apply the knowledge of fluid statics, kinematics and dynamics while addressing problems of mechanical and chemical engineering.
CO-4	Describe the principles of fluid kinematics and dynamics.
CO-5	Dimensionless number and illustrate the basic concept of compressible flow and CFD.

Course Instructor: THONTARAJ URS T S

Signature: 

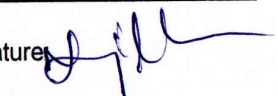
Course -4: Kinematics of Machines

Course -4 Code: 18ME44

Course Outcomes: After studying this course, the students will be able to:	
CO-1	Knowledge of mechanisms and their motion.
CO-2	Understand the inversions of four bar mechanisms.
CO-3	Analyse the velocity, acceleration of links and joints of mechanisms.
CO-4	Analysis of cam follower motion for the motion specifications.
CO-5	Understand the working of the spur gears & Analyse the gear trains, speed ratio and torque.

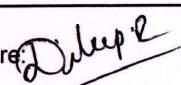
Course Instructor: Dr Manjunatha Babu N S

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Course Outcomes: After studying this course, the students will be able to:	
CO-1	Describe the casting process, preparation of Green, Core, dry sand molds and Sweep, Shell, Resistance, Coreless, Electrical and Cupola Metal Furnaces.
CO-2	Explain the Solidification process and Casting of Non-Ferrous Metals. Casting defects- causes, features and remedies.
CO-3	Describe principle, need and types of welding, the Metal Arc, TIG, MIG, Submerged and Atomic Hydrogen Welding.
CO-4	Describe the Metallurgical aspects in Welding and inspection methods for the quality assurance of components made of casting and joining process.
CO-5	

Course Instructor: DILEEP R

Signature: **Course -6: Mechanical Measurements and Metrology**

Course -6 Code: 18ME46B

Course Outcomes: After studying this course, the students will be able to:	
CO-1	Understand the objectives of metrology, methods of measurement, standards of measurement & various measurement parameters
CO-2	Explain tolerance, limits of size, fits, geometric and position tolerances, gauges & their design and principle of comparators
CO-3	Describe measurement of major & minor diameter, pitch, angle and effective diameter of screw threads.
CO-4	Explain measurement systems, transducers, intermediate modifying devices and terminating devices.
CO-5	Describe functioning of force, torque, pressure, strain and temperature measuring devices.

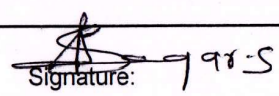
Course Instructor: Srinivas A

Signature: **Course -7: M M M Lab**

Course -7 Code: 18MEL47A

Course Outcomes: After studying this course, the students will be able to:	
CO-1	To calibrate pressure angle , thermocouple, LVDT, load cell and micrometer
CO-2	To measure angle using sine center/sine bar/ bevel protractor, alignment using autocollimator/ roller etc
CO-3	To determine measurement using optical/projector tool makers microscope , optical flats
CO-4	To measure screw thread parameter using 2-wire or 3-wire method, gear tooth profile using gear tooth vernier/ gear tooth micrometer
CO-5	

Course Instructor: SAGAR S

Signature: **Course -8: FOUNDRY AND FORGING LAB**

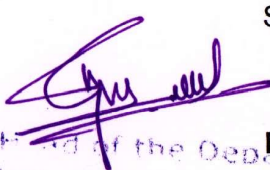
Course -8 Code: 18MEL48

Course Outcomes: After studying this course, the students will be able to:	
CO-1	Prepare sand specimens and conduct compression, shear, tensile, permeability, sieve analysis, clay and moisture
CO-2	Prepare moulds with and without pattern
CO-3	create models to do different forging operations.
CO-4	
CO-5	

Course Instructor: Pruthvi H M

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Semester: 5

Scheme:-2018

Course -1: Management & Engineering Economics

Course -1 Code: 18ME51

Course Outcomes: After studying this course, the students will be able to:	
CO-1	Explain the development of management, role it plays, effective planning for the development of the organization.
CO-2	Explain the necessity for organizing, staffing, good leadership, communication and coordination for establishing effective control in an organization.
CO-3	Explain engineering economics, demand supply and its importance in economic decision making and problem solving.
CO-4	Calculate present worth, annual worth and IRR for different alternatives in economic decision making.
CO-5	Explain the procedure involved in estimation of cost for a simple component, product costing and depreciation, its methods.

Course Instructor: Pruthvi H M

Signature:

Course -2: DME- I

Course -2 Code: 18ME52

Course Outcomes: After studying this course, the students will be able to:	
CO-1	Analyze the component behaviour subjected to various forces/ loads
CO-2	design the mechanical system based on strength and rigidity
CO-3	design of different types of couples
CO-4	design the completely joints
CO-5	select proper material based on customer needs, design procedure and uses

Course Instructor: SURESH KUMAR K

Signature:

Course -3: DYNAMICS OF MACHINES

Course -3 Code: 18ME53

Course Outcomes: After studying this course, the students will be able to:	
CO-1	Apply the knowledge of static and dynamic equilibrium conditions of mechanisms subjected to forces and couples, with and without friction
CO-2	analyze the balancing of rotating and reciprocating masses
CO-3	explain the principle of equilibrium of mechanism, governors, guroscope and mechanical vibration
CO-4	Apply the principle of equilibrium of mechanism, governors, guroscope and mechanical vibration
CO-5	

Course Instructor: BALASUBRAMANIAM N S

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Signature:

Course -4: TM

Course -4 Code: 18ME54

Course Outcomes: After studying this course, the students will be able to:	
CO-1	ABLE TO GIVE PRECISE DEFINITION OF TURBOMACHINERY
CO-2	IDENTIFY THE VARIOUS TYPES OF TURBOMACHINES.
CO-3	APPLY THE EULERS EQUATION FOR TURBOMACHINES TO ANALYZE ENEGRY TRANSFER IN TURBOMACHINES.
CO-4	UNDERTAND THE PRINICPLE OF OPERATION OF PUMPS,FANS, COMPRESSORS AND TURBINE
CO-5	PERFORM THE PRELIMINARY DESIGN OF TURBOMACHINES.


Course Instructor: THONTARAJ URS T :

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Signature:

Course Outcomes: After studying this course, the students will be able to:	
CO-1	Identify and analyse the functional requirements of a fluid power transmission system for a given application.
CO-2	Visualize how a hydraulic/pneumatic circuit will work to accomplish the function.
CO-3	Design an appropriate hydraulic or pneumatic circuit or combination circuit like electro-hydraulics, electro-pneumatics for a given application.
CO-4	Select and size the different components of the circuit.
CO-5	Develop a comprehensive circuit diagram by integrating the components selected for the given application.

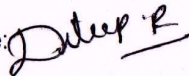
Course Instructor: ANAND G

Signature: **Course -6: Operations Management**

Course -6 Code: 18ME56

Course Outcomes: After studying this course, the students will be able to:	
CO-1	Explain the function of business organization operation management with production s/m and productivit. Along with analyse the decision making models to prepare graphical linear programming.
CO-2	Analyse the various forecasting techniques and evaluate capacity requirements and facilities layout.
CO-3	Generalise aggregate planning, master scheduling process and describe inventory control involving economic order quantity models
CO-4	Explain MRP and CRP, concepts of tenders, SCM, make and buy decision and E-procurement
CO-5	


Course Instructor: DILEEP R

Signature: **Course -7: FLUID MECHANICS & MACHINERY LAB**

Course -7 Code: 18MEL57

Course Outcomes: After studying this course, the students will be able to:	
CO-1	Perform experiments to determine the co-efficient of discharge of flow measuring devices
CO-2	Conduct experiments on hydraulic turbine and pumps to draw characteristics
CO-3	Test basic performance parameters of hydraulic turbines and pumps and execute the knowledge in real life situations
CO-4	Determine the energy flow pattern through the hydraulic turbine and pumps
CO-5	Exhibit his competency towards preventive maintenance of hydraulic machines

Course Instructor: Pruthvi H M

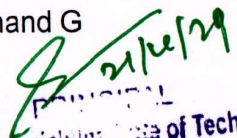
Signature: **Course -8: Energy Conversion lab**

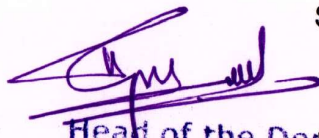
Course -8 Code:18MEL58

Course Outcomes: After studying this course, the students will be able to:	
CO-1	Students will be able to determine the Flash point, Fire point, Calorific value and Viscosity of various lubrication oils.
CO-2	Students will have the knowledge of engine operation through valve timing diagram.
CO-3	To conduct performance test on 2 Stroke Petrol Engine, 4 Stroke Diesel Engine, Four Stroke Petrol Engines
CO-4	
CO-5	

Course Instructor: Anand G

Signature: 


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Semester: 6

Scheme:-2018

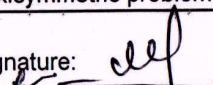
Course -1: FEM

Course -1 Code: 18ME61

Course Outcomes: After studying this course, the students will be able to:

CO-1	Understand the concept behind the formulation method in FEM & Develop element characteristic Equation
CO-2	Identify the application of FEM such as Bars, Trusses & generate global equation
CO-3	Apply suitable boundary conditions to a global equations for Beams and circular shafts
CO-4	Apply and generate global equations for fluid flow & Heat transfer problems
CO-5	Apply suitable boundary conditions and generate global equations for Dynamic and Axisymmetric problems

Course Instructor: SURESH KUMAR S

Signature: 

Course -2: DESIGN OF MACHINE ELEMENTS - II

Course -2 Code: 18ME62

Course Outcomes: After studying this course, the students will be able to:

CO-1	Apply design principles for the design of mechanical systems involving springs, belts, pulleys, and wire ropes
CO-2	Design different types of gears and simple gear boxes for relevant applications.
CO-3	Understand the design principles of brakes and clutches.
CO-4	Apply design concepts of hydrodynamic bearings for different applications and select Anti friction bearings for different applications using the manufacturers, catalogue.
CO-5	

Course Instructor: MOHAN KUMAR K

Signature: 


Course -3: Heat Transfer

Course -3 Code: 18ME63

Course Outcomes: After studying this course, the students will be able to:

CO-1	Identify and explain the basic theory of heat transfer involved in different situations
CO-2	Compute the heat transfer in one dimensional steady state heat conduction
CO-3	Compute unsteady state heat conduction using lumped heat analysis and using Heisler's charts.
CO-4	<i>Interpret and Compute forced and free convective heat transfer.</i>
CO-5	Explain the principles of radiation heat transfer and compute heat transfer.
CO-6	Analyse heat exchangers using LMTD and NTU approach.

Course Instructor: Dr PDS

Signature: 

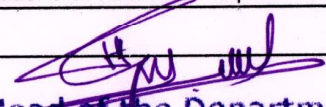
Course -4: Non Traditional Machining

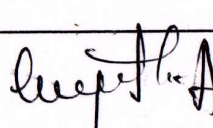
Course -4 Code: 18ME641

Course Outcomes: After studying this course, the students will be able to:

CO-1	Explain Non-Traditional machining, need, Classifications and factors considered to select the process
CO-2	Explain the principle, mechanism of material removal, construction features and working of various NTM processes with simple sketches.
CO-3	Explain the process parameters and process characteristics of various NTM processes
CO-4	Explain the advantages, limitations and applications of various NTM processes.
CO-5	

Course Instructor: SAMPATH A

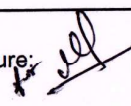

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Course Outcomes: After studying this course, the students will be able to:

CO-1	Discuss causes of energy scarcity and its solution, energy resources and availability of renewable energy and thermal energy applications
CO-2	Discuss types of solar collectors, their configuration, solar cell system, its characteristics and their application.
CO-3	Explain generation of energy from hydrogen, wind, geothermal system, solid waste and agriculture refuse.
CO-4	Discuss production of energy from biomass, biogas, tidal energy resources, sea wave energy and ocean thermal energy.
CO-5	

Course Instructor: Dhanalakshmi V

Signature: 


Course -6: ANSYS Lab

Course -6 Code: 18MEL66

Course Outcomes: After studying this course, the students will be able to:

CO-1	Demonstrate at least two different type of example to model and analyze bars or plates made from
CO-2	Use the modern tools to formulate the problem, and able to create geometry, discretize, apply boundary condition to solve problems of bars, truss, beams, plate to find stress with different loading conditions
CO-3	Demonstrate the deflection of beams subjected to point, uniformly distributed and varying loads
CO-4	Analyze the given problem by applying basic principle to solve and demonstrate 1D and 2D heat transfer with conduction and convection boundary conditions.
CO-5	Carry out dynamic analysis and finding natural frequencies for various boundary conditions and also analyze with forcing function.

Course Instructor: Dr MNS

Signature: 


Course -7: Heat Transfer Lab

Course -7 Code: 18MEL67

Course Outcomes: After studying this course, the students will be able to:

CO-1	Explain the concepts of modes of heat transfer, unsteady state heat transfer and combined heat transfer mechanism
CO-2	Formulate the heat transfer relations through composite walls, fins and heat exchangers
CO-3	Identify and solve problems on modes of heat transfer composite walls, fins and heat exchangers
CO-4	
CO-5	

Course Instructor: Anand Gadekar

Signature: 


Course -8: Mini Prj

Course -8 Code: 18MEP68

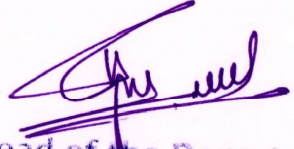
Course Outcomes: After studying this course, the students will be able to:

CO-1	IDENTIFY AND ANALYZE PROBLEMS BY APPLYING ENGINEERING CONCEPTS.
CO-2	SELECT AND APPLY EFFICIENT TOOLS FOR DESIGNING PROJECT MODULES.
CO-3	WORK IN A TEAM TO SOLVE REAL LIFE PROBLEMS AND MAINTAIN PROFESSIONALISM.
CO-4	PREPARE A REPORT AS PER RECOMMENDED FORMAT AND DEFEND THE WORK.
CO-5	

Course Instructor: Dr.MNS

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Semester: 7

Course -1: ENERGY ENGINEERING

Course -1 Code: 17ME71

Course Outcomes: After studying this course, the students will be able to:

CO-1	Classify concepts of thermal energy and its conversion systems and to identify renewable energy sources.
CO-2	Describe the concepts of diesel engine system & hydro-electric energy and their utilization.
CO-3	Explain the basic concepts of solar radiation and analyze the working of solar PV and thermal systems
CO-4	Explain principles of energy conversion from alternate sources including wind, geothermal, ocean.
CO-5	Describe the biomass, biogas concepts and applications of fuel cells, thermoelectric convertor and MHD generator.

Course Instructor: TTS

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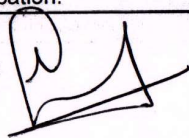
Course -2: Fluid Power System

Course -2 Code:17ME72

Course Outcomes: After studying this course, the students will be able to:

CO-1	Identify and analyse the functional requirements of a fluid power transmission system for a given application.
CO-2	Visualize how a hydraulic/pneumatic circuit will work to accomplish the function.
CO-3	Design an appropriate hydraulic or pneumatic circuit or combination circuit like electro-hydraulics, electro-pneumatics for a given application.
CO-4	Select and size the different components of the circuit.
CO-5	Develop a comprehensive circuit diagram by integrating the components selected for the given application.

Course Instructor: Anand Gadekar

Signature: 

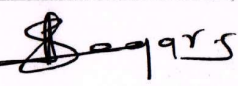
Course -3: CONTROL ENGINEERING

Course -3 Code: 17ME73

Course Outcomes: After studying this course, the students will be able to:

CO-1	Recognize the control system and its types, control actions, different types of controllers and Analyze, Examine the system governing equations of a physical models
CO-2	Analyze and Examine the system governing equations of a physical models and to determine the gain of a system using block diagrams and signal flow graphs.
CO-3	Illustrate the response of 1st order and 2nd order system and to analyze the transfer function stability using Root Locus Plots
CO-4	Determine the stability of TF using Bode Plot, Polar Plots and Nyquist Plots.
CO-5	Employ state equations to study the compensators, Controllability and Observability

Course Instructor: SAGAR S

Signature: 

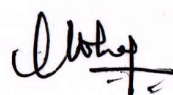
Course -4: TRIBOLOGY

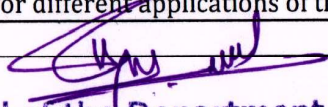
Course -4 Code: 17ME742

Course Outcomes: After studying this course, the students will be able to:

CO-1	Understand the fundamentals of tribology and associated parameters, viz friction and its related theories, wear and its mechanisms, and viscosity of lubricants and its measurements.
CO-2	Apply concepts of tribology for the performance analysis and design of components experiencing relative motion (hydrodynamic and plane slider bearing, hydrostatic lubrications).
CO-3	Select proper bearing materials for a given tribological applications.
CO-4	Apply the principles of surface engineering for different applications of tribology.

Course Instructor: Mohan Kumar K

Signature: 


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Course -5: Smart Materials**Course -6 Code:17ME745**


Course Outcomes: After studying this course, the students will be able to:

CO-1	Describe the methods of controlling vibration using smart systems and fabrication methods of MEMS.
CO-2	Explain the principle concepts of Smart materials, structures, Fibre optics, ER & MR Fluids, Biomimetics and MEMS with principles.
CO-3	Analyze the properties of smart structures, MEMS, with the applications and select suitable procedure for fabrication.
CO-4	Summarize the methods and uses of Micro fabrications, Biomimetics, types of polymers used in MEMS, Fibre optics, piezoelectric materials.
CO-5	

Course Instructor: Dr. MNSSignature: **Course -6: Mechatronics****Course -6 Code: 17ME753**

Course Outcomes: After studying this course, the students will be able to:

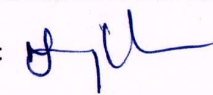
CO-1	Outline the development of Mechatronic systems, concept of Sensors, and Actuators.
CO-2	Illustrate & summarize the working principle of Microprocessor & Microcontrollers Based Mechatronics Systems.
CO-3	Identify program logic controller and Interpret the integration fundamentals of Advanced actuators and Industrial robots.
CO-4	Describe and Distinguish between Mechanical and Electrical actuation systems
CO-5	Explain and discuss Pneumatic and Hydraulic actuation systems

Course Instructor: ~~Manjunatha Babu N S~~ Dr. NCSignature: **Course -6: DESIGN LABORATORY****Course -6 Code: 17MEL76**

Course Outcomes: After studying this course, the students will be able to:

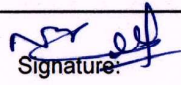
CO-1	To identify vibrations in machine elements, forces and couples in rotating machine components and to determine the critical speed.
CO-2	To understand the working principle of machine elements such as governors, gyroscope and pressure distribution in journal bearings.
CO-3	To measure strain induced in a structural member using the principle of photo-elasticity, strain gauge and strain rosette
CO-4	
CO-5	

Course Instructor: Manjunatha Babu N S

Signature: **Course -7: CIM LAB****Course -7 Code: 17MEL77**


Course Outcomes: After studying this course, the students will be able to:

CO-1	Able to generate CNC part programs for turning and milling operations.
CO-2	Able to illustrate the procedure to develop CNC part program using Edgecam.
CO-3	Explain the concepts of robotics, FMS, hydraulics, pneumatics and automated systems
CO-4	
CO-5	

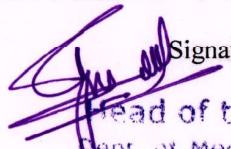
Course Instructor: Dr. NC/SAM/PTSignature: **Course -8: PROJECT****Course -8 Code: 17MEP78**

Course Outcomes: After studying this course, the students will be able to:

CO-1	IDENTIFY AND ANALYZE PROBLEMS BY APPLYING ENGINEERING CONCEPTS.
CO-2	SELECT AND APPLY EFFICIENT TOOLS FOR DESIGNING PROJECT MODULES.
CO-3	WORK IN A TEAM TO SOLVE REAL LIFE PROBLEMS AND MAINTAIN PROFESSIONALISM.
CO-4	PREPARE A REPORT AS PER RECOMMENDED FORMAT AND DEFEND THE WORK.
CO-5	

Course Instructor: Dr. MNSSignature: 


 24/4/21
 PRINCIPAL
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 Oorgaam, K.G.F. - 563 120.


 Head of the Department
 Dept. of Mechanical Engineering
 Dr. T. Thimmaiah Institute of Technology,
 Oorgaam, K.G.F.-563 120.
 HOD



DR.T.THIMMAIAH INSTITUTE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING

F.No:DrTTIT/IQAC/2020-21/075L

Semester: 8

Course -1: Operations Research

Course -1 Code: 17ME81

Course Outcomes: After studying this course, the students will be able to:

CO-1	derive optimal solution to linear programming problems by graphical method.
CO-2	Formulate as LPP and derive optimal solution to linear programming problems by simplex method, Big-M method and Dual Simplex method.
CO-3	Formulate as Transportation and Assignment problems and derive solutions for Transportation, Assignment and Travelling salesman problems.
CO-4	Solve waiting line problems M/M/1 and M/M/K Queuing models and construct Network diagrams and determine Critical path , Floats for deterministic and PERT networks including crashin
CO-5	Solve problems on Game Theory for pure and mixed strategy under competitive environment and determine minimum processing times for sequencing of n-jobs 2 machines, n-jobs 3 machines, n jobs m machines and johnsons algorithm.

Course Instructor: Dr H G Shenoy

Signature:

Course -2: Additive Manufacturing

Course -2 Code: 17ME82

Course Outcomes: After studying this course, the students will be able to:

CO-1	Understand the different process of AM, guidelines and applications of AM.
CO-2	Undersatand the hydraulic and Pneumatic motors,Electrical Motors and Actuators.
CO-3	Understand the different process of AM using polymers and powder production technology.
CO-4	Analyse the different characterisation techniques in nano materials Manufacturing.
CO-5	Describe the NC , CNC Machine programming and automation techniques.

Course Instructor: PHM

Signature:

Course -3:Product Life Cycle Management

Course -3 Code: 17ME835

Course Outcomes: After studying this course, the students will be able to:

CO-1	Explain the various strategies of PLM and Product Data Management
CO-2	Describe decomposition of product design and model simulation
CO-3	Apply the concept of New Product Development and its structuring
CO-4	Analyze the technological forecasting and the tools in the innovation
CO-5	Apply the virtual product development and model analysis

Course Instructor:

Signature:

Course -4: INTERNSHIP

Course -4 Code: 17ME84

Course Outcomes: After studying this course, the students will be able to:

CO-1	Apply engineering and management principles
CO-2	Analyze real-time problems and suggest alternate solutions
CO-3	Communicate effectively and work in teams
CO-4	Imbibe the practice of professional ethics and need for lifelong learning.
CO-5	

Course Instructor:

Signature:

Head of the Department
Dept. of Mechanical Engineering
Dr. T. Thimmaiah Institute of Technology,
Oorgaum, K.G.F.-563 120.

Course -5: PROJECT F**Course -5 Code: 17MEP85**

Course Outcomes: After studying this course, the students will be able to:

CO-1	IDENTIFY AND ANALYZE PROBLEMS BY APPLYING ENGINEERING CONCEPTS.
CO-2	SELECT AND APPLY EFFICIENT TOOLS FOR DESIGNING PROJECT MODULES.
CO-3	WORK IN A TEAM TO SOLVE REAL LIFE PROBLEMS AND MAINTAIN PROFESSIONALISM.
CO-4	PREPARE A REPORT AS PER RECOMMENDED FORMAT AND DEFEND THE WORK.
CO-5	

Course Instructor: **DR. MNS**Signature: **Course -6: TECHNICAL SEMINAR****Course -8 Code: 17MES86**

Course Outcomes: After studying this course, the students will be able to:

CO-1	perform survey and review relevant information to the field of study
CO-2	enhance presentation skills and report writing skills
CO-3	develop alternative solutions which are sustainable
CO-4	
CO-5	

Course Instructor: **Balasubramaniam N.S.**Signature: 
HOD

Head of the Department
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