TRANSFORM CALCULUS, FOURIER SERIES AND NUMERICAL TECHNIQUES

(21MAT31)

1. Course Outcomes

CO Number	Course Outcome **At the end of the course, student should be able to . . .**	Blooms' Level
CO1	To solve ordinary differential equations using Laplace transform.	L1, L2, L3
CO2	Demonstrate the Fourier series to study the behaviour of periodic functions and their applications in system communications, digital signal processing and field theory.	L1, L2, L3
CO3	To use Fourier transforms to analyze problems involving continuous-time signals and to apply Z-Transform techniques to solve difference equations.	L1, L2, L3
CO4	To solve mathematical models represented by initial or boundary value problems involving partial differential equations.	L1, L2, L3
CO5	Determine the extremals of functionals using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis.	L1, L2, L3

METAL CASTING FORMING & JOINING PROCESS (IPCC)

(21ME32)

1. Course Outcomes

CO Number	Course Outcome **At the end of the course, student should be able to . . .**	Blooms' Level
CO1	Select appropriate primary manufacturing process and related parameters for obtaining initial shape and size of Components.	L1 & L2
CO2	Design and develop adequate tooling linked with casting, welding and forming operations.	L1 & L2
CO3	Appreciate the effect of process parameters on quality of manufactured components.	L1 & L2
CO4	Demonstrate various skills in preparation of molding sand for conducting tensile, shear and compression tests using Universal sand testing machine.	L1 & L2
CO5	Demonstrate skills in preparation of forging models involving upsetting, drawing and bending operations. Demonstrate skills in preparation of Welding models.	L1 & L2

MATERIAL SCIENCE AND ENGINEERING (IPCC)

(21ME33)

1. Course Outcomes

CO Number	Course Outcome **At the end of the course, student should be able to . . .**	Blooms' Level
CO1	Understand the atomic arrangement in crystalline materials and describe the periodic arrangement of atoms in terms of unit cell parameters.	L1 & L2
CO2	Understand the importance of phase diagrams and the phase transformations.	L1 & L2
CO3	Know various heat treatment methods for controlling the microstructure.	L1 & L2
CO4	Correlate between material properties with component design and identify various kinds of defects.	L1 & L2
CO5	Apply the method of materials selection, material data and knowledge sources for computer-aided selection of materials.	L1 & L2

THERMODYNAMICS

(21ME34)

1. Course Outcomes

CO Number	Course Outcome **At the end of the course, student should be able to . . .**	Blooms' Level
CO1	Describe the fundamental concepts and principles of engineering thermodynamics.	L1, L2, L3
CO2	Apply the governing laws of thermodynamics for different engineering applications.	L1, L2, L3
CO3	Analyse the various thermodynamic processes, cycles and results.	L1, L2, L3
CO4	Interpret and relate the impact of thermal engineering practices to real life problems.	L1, L2, L3

Faculty Signature **HOD Signature**

COMPLEX ANALYSIS, PROBABILITY AND LINEAR PROGRAMMING

(21MATME41)

1. Course Outcomes

CO Number	Course Outcome **At the end of the course, student should be able to . . .**	Blooms' Level
CO1	Use the concepts of an analytic function and complex potentials to solve the problems arising in fluid flow.	L1, L2, L3
CO2	Utilize conformal transformation and complex integral arising in aerofoil theory, fluid flow visualization and image processing.	L1, L2, L3
CO3	Apply discrete and continuous probability distributions in analyzing the probability models arising in the engineering field.	L1, L2, L3
CO4	Analyze and solve linear programming models of real-life situations and solve LPP by the simplex method.	L1, L2, L3
CO5	Learn techniques to solve Transportation and Assignment problems.	L1, L2, L3

MACHINING SCIENCE AND JIGS & FIXTURES (IPCC)

(21ME42)

1. Course Outcomes

CO Number	Course Outcome **At the end of the course, student should be able to . . .**	Blooms' Level
CO1	Demonstrate the Conventional CNC machines and advanced manufacturing process operations	L1 & L2
CO2	Determine tool life, cutting force, and economy of the machining process.	L1 & L2
CO3	Analyze the influence of various parameters on machine tools' performance.	L1 & L2
CO4	Select the appropriate machine tools and process, the Jigs, and fixtures for various applications.	L1 & L2

FLUID MECHANICS (IPCC)

(21ME43)

1. Course Outcomes

CO Number	Course Outcome **At the end of the course, student should be able to . . .**	Blooms' Level
CO1	Understand the basic principles of fluid mechanics and fluid kinematics	L1, L2, L3
CO2	Acquire the basic knowledge of fluid dynamics and flow measuring instruments	L1, L2, L3
CO3	Understand the nature of flow and flow over bodies and the dimensionless analysis	L1, L2, L3
CO4	Acquire the compressible flow fundamental and basics of CFD packages and the need for CFD analysis.	L1, L2, L3
CO5	Conduct basic experiments of fluid mechanics and understand the experimental uncertainties.	L1, L2, L3

MECHANICS OF MATERIALS

(21ME44)

1. Course Outcomes

CO Number	Course Outcome **At the end of the course, student should be able to . . .**	Blooms' Level
CO1	Understand simple, compound, thermal stresses and strains their relations and strain energy.	L1, L2, L3
CO2	Analyse structural members for stresses, strains and deformations.	L1, L2, L3
CO3	Analyse the structural members subjected to bending and shear loads.	L1, L2, L3
CO4	Analyse shafts subjected to twisting loads.	L1, L2, L3
CO5	Analyse the short columns for stability.	L1, L2, L3

Faculty Signature **HOD Signature**