

AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER

Department Of Production Engineering

Course Outcomes

Second Year – 2015 Course			
Course Code	Course Name	Course Outcomes	
Semester-I			
207002	Engineering Mathematics III	CO1	Solve higher order Linear Differential equation & apply to modeling & analyzing mass spring system.
		CO2	Apply Laplace transform & Fourier transform techniques to solve Differential equation involved in vibration theory, heat transform & related engineering applications
		CO3	Apply statistical methods like correlation regression analysis in analyzing, interpreting experimental data.
		CO4	Apply probability theory in testing and quality control.
		CO5	Perform vector differentiation and integration, analyze the vector fields and apply to fluid flow problems.
		CO6	Solve various partial differential equation such as modeling and analyzing mass spring systems.
211101	Heat and Fluid Engineering	CO1	Understand the basic principles and laws of fluid mechanics to recognize and analyze the type of fluid and fluid flow along with its application.
		CO2	Develop the understanding of basic pressure measurement and its application in throughout fluid mechanics.
		CO3	Understand the losses take place in practical application and to know how to overcome it in different cases like parallel and series connections
		CO4	Analyze boiler and energy balance concept. Also understand the properties and behaviour of steam and different types of fuels.
		CO5	Understand basic working principle and application of Vapour compression cycle, turbines and compressor and analyze its performance characteristics.
		CO6	Perform individually or in a group to formulate and solve the engineering problem and to conclude the result of the outcome.

211102	Mechanics of Materials	CO1	Understand the concepts of stress and strain at a point as well as the stress-strain relationship for homogeneous, isotropic materials.
		CO2	Understand the analysis and design the members subjected to tension, compression, torsion, bending and combined stresses using fundamental concepts of stress, strain and elastic behavior of materials.
		CO3	Understand the procedure of determining the stresses and strains in members subjected to combined loading and apply the theories of failure for static loading.
		CO4	Understand analysis of slender, long columns and determine and illustrate principal stresses, maximum shearing stress and stresses acting on a structural member.
		CO5	Understand torsion of circular shafts, analysis of cylinders and spherical shells
		CO6	Understand slope and deflections of beams, concepts of buckling of beams.
211103	Welding and Foundry	CO1	Able to classify and describe welding processes
		CO2	Learn advanced welding techniques
		CO3	Predict safety measures, inspection and testing of welding of welding
		CO4	Describe and classify metal casting process and casting defects
		CO5	Justify the pattern material, allowances, and effect of mould ingredients on mould strength
		CO6	Learn Design of gating system and risers
211104	Material Science	CO1	Explain the mechanism of plastic deformation
		CO2	Define the mechanical properties of materials and conduct destructive and non destructive tests to evaluate and test the properties of materials
		CO3	Understand various strengthening mechanisms
		CO4	Describe various pyrometers with a neat sketch and explain their working and application
		CO5	Understand corrosion and suggest various means to prevent corrosion
		CO6	Explain various aspects of powder metallurgy

211105	Heat and Fluid Engineering Lab	CO1	Understand Bernoulli's equation & learn to Determine of friction factor for laminar and turbulent flow through pipes
		CO2	Determine of losses in various pipe fitting with major and minor losses
		CO3	Calibration of venturimeter/orifice meter
		CO4	Understand working and construction of boilers.
		CO5	Understand working and construction of vapor compression refrigeration system & Air conditioning system
		CO6	Understand working and construction petrol engine, diesel engine & air compressor.
211106	Welding and Foundry Lab	CO1	Able to classify and describe welding processes
		CO2	Learn advanced welding techniques
		CO3	Predict safety measures, inspection and testing of welding of welding
		CO4	Describe and classify metal casting process and casting defects
		CO5	Justify the pattern material, allowances, and effect of mould ingredients on mould strength
		CO6	Learn Design of gating system and risers
211107	Material Science Lab	CO1	Explain the mechanism of plastic deformation
		CO2	Define the mechanical properties of materials and conduct destructive and non destructive tests to evaluate and test the properties of materials
		CO3	Understand various strengthening mechanisms
		CO4	Describe various pyrometers with a neat sketch and explain their working and application
		CO5	Understand corrosion and suggest various means to prevent corrosion
		CO6	Explain various aspects of powder metallurgy

211108	Machine Drawing & Computer Graphics Lab	CO1	Understanding and drawing of conventional representation of machine components in the sketchbook.
		CO2	Learning of AutoCAD software and drawing of machine components in AutoCAD.
		CO3	Understanding and drawing of types of Screws, Bolts and Nuts, Nut Locking Arrangements.
		CO4	Draw assembly and details of Machine Component.
		CO5	Understand concept of Mathematical representation of any two primitives.
		CO6	Learning different commands in AutoLISP and parametric programming of a component.
Semester-II			
203050	Electrical Technology	CO1	Understand and perform power measurement of single phase and three phases. Be able to understand the concept of Terrif and illumination
		CO2	Describe and classify the types of single phase transformer, tree phase transformer and three phase induction motor
		CO3	Describe and classify the types of single phase induction motors and synchronous generators
		CO4	Understand construction and working of DC motors, generators and servo and stepper motors
		CO5	Understand semiconductor devices and be able to predict their applications
		CO6	Predict the advantages of various electric drives and speed control
211110	Theory of Machines	CO1	Describe and Comprehend the basic knowledge of mechanism, their inversions and applications.
		CO2	Comprehend and analyze static & dynamic force analysis of slider-crank mechanism.
		CO3	Comprehend and analyze the velocity and acceleration analysis of mechanisms.
		CO4	Describe and Comprehend the mechanical elements like belt drives
		CO5	Describe and Comprehend the different types of brakes & dynamometer.
		CO6	Able to apply the concepts of tribology in manufacturing

211111	Machine Tool Operations	CO1	Understand the basic principles and process of machine design.
		CO2	Design the cotter joints and knuckle joints.
		CO3	Analyse the stress and strain on mechanical components.
		CO4	Understand, identify and quantify failure modes for mechanical parts such as shaft, power screws, mechanical springs, gears, and bearings.
		CO5	Design spur gear and understand its applications.
		CO6	Demonstrate knowledge on basic machine elements used in design of machine elements to withstand the loads and deformations for a given practical application.
211112	Design of Machine Elements	CO1	Understand the basic principles and process of machine design.
		CO2	Design the cotter joints and knuckle joints.
		CO3	Analyse the stress and strain on mechanical components.
		CO4	Understand, identify and quantify failure modes for mechanical parts such as shaft, power screws, mechanical springs, gears, and bearings.
		CO5	Design spur gear and understand its applications.
		CO6	Demonstrate knowledge on basic machine elements used in design of machine elements to withstand the loads and deformations for a given practical application.
211113	Engineering Metallurgy	CO1	Understand microstructure of different steel
		CO2	Use proper Heat Treatment for the steels considering properties and service requirements
		CO3	Distinguish different Alloy Steels and Cast Irons based on chemical compositions and microstructures
		CO4	Learn alloy steels and cast irons
		CO5	Learn non-ferrous alloys and Composites with their need, scope and applications
		CO6	Understand modern engineering materials

203051	Electrical Technology Lab	CO1	Understand and perform power measurement of single phase and three phases. Be able to understand the concept of Terrif and illumination
		CO2	Describe and classify the types of single phase transformer, tree phase transformer and three phase induction motor
		CO3	Describe and classify the types of single phase induction motors and synchronous generators
		CO4	Understand construction and working of DC motors, generators and servo and stepper motors
		CO5	Understand semiconductor devices and be able to predict their applications
		CO6	Predict the advantages of various electric drives and speed control
211114	Theory of Machines Lab	CO1	Describe and Comprehend the basic knowledge of mechanism, their inversions and applications.
		CO2	Comprehend and analyze static & dynamic force analysis of slider-crank mechanism.
		CO3	Comprehend and analyze the velocity and acceleration analysis of mechanisms.
		CO4	Describe and Comprehend the mechanical elements like belt drives
		CO5	Describe and Comprehend the different types of brakes & dynamometer.
		CO6	Able to apply the concepts of tribology in manufacturing
211115	Engineering Metallurgy Lab	CO1	Understand microstructure of different steel
		CO2	Use proper Heat Treatment for the steels considering properties and service requirements
		CO3	Distinguish different Alloy Steels and Cast Irons based on chemical compositions and microstructures
		CO4	Learn alloy steels and cast irons
		CO5	Learn non-ferrous alloys and Composites with their need, scope and applications
		CO6	Understand modern engineering materials

211116	Production Practice I	CO1	Understand and Operate various machines like lathe, milling etc.
		CO2	Perform plain turning, taper turning etc. on lathe machine
		CO3	Perform gear cutting operation on milling machine
		CO4	Understand the all gear drive, back gear mechanism of lathe
		CO5	Perform the forging operation for knife edge and Vee shape tool.
		CO6	Learn indexing head and its use in gear cutting
211117	Soft skills	CO1	Become more effective individual through goal/target setting, self-motivation and by practicing creative thinking
		CO2	Effectively communicate through verbal/oral, listening skills, writing skills and presentation skills
		CO3	Understand importance of professional etiquettes
		CO4	Function effectively in teams by applying skills like team work, inter-personal relationships, and conflict management
		CO5	Know about role, responsibilities and skills required for leadership
		CO6	Develop time and stress management skills required in problem solving with confidence building