AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER

Department Of Production Engineering

Course Outcomes

Second Year – 2019 Course			
Course Code	Course Name	Course Outcomes	
Semester-I			
207007	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.
211081	Heat and Fluid Engineering	CO1	Understand the concept of fluid along with its different properties and pressure measurement
		CO2	Development of ability in students to identify types of flow, various losses during flow of fluid
		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	Acquiring knowledge of different types of fuels and their analysis, steam and its properties.
		CO5	refrigeration system and properties of air
		CO6	Understanding the basics of compressors, engines, turbines, pumps, compressors, boiler, and refrigerators.

211082	Strength 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.
211083	Manufacturing Processes –I	CO1	Design mould for sand casting process.
		CO2	Understand working principles and operations of metal cutting processes.
		CO3	Demonstrate kinematics of conventional machines.
		CO4	Select appropriate joining process for a given application.
		CO5	Identify applications of additive manufacturing processes.
		CO6	Understand various surface finishing processes.

211084	Materials Science and Metallurgy	CO1	Understand the concept of phase dig. For various alloy system &their solidification pattern.
		CO2	Evaluate the mech. Props. Of the materials by performing mech. tests and apply the knowledge of NDT'S to check the quality of the product.
		CO3	Understand and apply the knowledge of powder manufacturing to produce the parts by non conventional route.
		CO4	Evaluate the heat treatment processes and apply the knowledge of it to change the props. of the product.
		CO5	Learning about different types of alloy steels & cast irons.
		CO6	Evaluate the performance & behaviour of the non-ferrous alloys
211085	Heat and Fluid Engineering Lab	CO1	Understant 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 venture meter/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.

211086	Strength of Materials Lab	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.
211087	Manufacturing Processes 1 Lab	CO1	Understand sand moulding process.
		CO2	Understand basics of welding process and perform welding operation by using TIG/MIG/Resistance welding.
		CO3	Understand and Operate various machines like lathe, milling etc.
		CO4	Perform plain turning, taper turning etc. on lathe machine.
		CO5	Understand the all gear drive, back gear mechanism of lathe.
		CO6	Learn 3D printing/additive manufacturing.

211088	Materials Science and Metallurgy Lab	CO1	Understand the concept of phase dig. For various alloy system &their solidification pattern.
		CO2	Evaluate the mech. Props. Of the materials by performing mech. tests and apply the knowledge of NDT'S to check the quality of the product.
		CO3	Understand and apply the knowledge of powder manufacturing to produce the parts by non conventional route.
		CO4	Evaluate the heat treatment processes and apply the knowledge of it to change the props. of the product.
		CO5	Learning about different types of alloy steels & cast irons.
		CO6	Evaluate the performance & behaviour of the non-ferrous alloys
211089	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 and Electronics Engineering	CO1	Describe and classify the types of single phase transformer, motors and generators
		CO2	Demonstrate understanding of fundamental feedback control system.
		CO3	Demonstrate the applications of power semiconductor devices
		CO4	Describe applications of operational amplifiers and other linear devices
		CO5	Use ladder logic to write PLC program
		CO6	Identify appropriate drive system for a given application

211091	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
211092	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.
211093	Advanced Materials	CO1	Learning about different types of alloy steels & cast irons.
		CO2	Comprehend and analyze modern materials
		CO3	Comprehend and analyze non metallic materials
		CO4	Learning about different types of composites.
		CO5	Understand and apply the knowledge of composite manufacturing
		CO6	Understand the concept of standards & codes used for advanced materials

211094	Industrial Engineering and Management	CO1	Understand the basics concepts, principles, types and function of management.
		CO2	Understand motivation and leadership theories and comparison for same.
		CO3	Application of entrepreneurship skills for setting up of new project.
		CO4	Understand basic concepts of industrial engineering and application of productivity improvement techniques.
		CO5	Apply and evaluate tools and techniques used in method study
		CO6	Identify, Apply and evaluate tools and techniques used in Work Measurement
203051	Electrical and Electronics Engineering Lab	CO1	Describe and classify the types of single phase transformer, motors and generators
		CO2	Demonstrate understanding of fundamental feedback control system.
		CO3	Demonstrate the applications of power semiconductor devices
		CO4	Describe applications of operational amplifiers and other linear devices
		CO5	Use ladder logic to write PLC program
		CO6	Identify appropriate drive system for a given application
211095	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

211096	Industrial Engineering and Management Lab	CO1	Understand the basics concepts, principles, types and function of management.
		CO2	Understand motivation and leadership theories and comparison for same.
		CO3	Application of entrepreneurship skills for setting up of new project.
		CO4	Understand basic concepts of industrial engineering and application of productivity improvement techniques.
		CO5	Apply and evaluate tools and techniques used in method study
		CO6	Identify, Apply and evaluate tools and techniques used in Work Measurement
211097	Soft Skill	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

211098	Programming in C Language Lab	CO1	Understand Syntax and structure of C-programming
		CO2	Learn Data types, Operators and Expressions in C
		CO3	Learn different Decision Statements
		CO4	Learn Loop & nested loop Statements
		CO5	Learn Programming with Pointer
		CO6	Understand how to creating and handle data files in C
211099	Project Based Learning	CO1	Identify the real life problem from societal need point of view
		CO2	Choose and compare alternative approaches to select most feasible one.
		CO3	Analyse and synthesize the identified problem from technological perspective
		CO4	Design the reliable and scalable solution to meet challenges
		CO5	Evaluate the solution based on the criteria specified
		CO6	Inculcate long life learning attitude towards the societal problems