AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER
Department of Mechanical Engineering
Course Outcome (CO)

Second Year -2015 Course			
Course Code	**Course Name**	**Course Outcomes**	
Semester I			
207002	**Engineering Mathematics-III**	C2O1.1	Find General solution of higher-order linear differential equation with constant & Variable coefficient using different Methods
		C2O1.2	Find Laplace transform and Fourier transform of functions using definition & properties & solve Ordinary D.E. using L.T.
		C2O1.3	Discuss the different techniques of statistical Analysis, Use of probability and probability distribution
		C2O1.4	Identify nature of vector fields, use different vector differential operators.
		C2O1.5	Evaluate Line, surface & Volume integrals & its application.
		C2O1.6	Solve boundary value problems for Laplace's equation, heat equation, the wave equation by separation of variables.
202041	**Manufacturing Process-I**	C202.1	Understand & Analyze foundry practices like pattern making, mold making, core making & inspection of defects.
		C202.2	Understand & analyze the hot & cold working, rolling, forging, extrusion & drawing process.
		C202.3	Understand the different plastic molding processes, extrusion of plastic and thermoforming process
		C202.4	Understand the different welding & joining processes & its defects.
		C202.5	Understand, design & analyze the different sheet metal working processes.
202043	**Thermodynamics**	C204.1	Apply various laws of thermodynamics to various processes and real systems.
		C204.2	Apply the concept of entropy, Calculate heat and work transfer, entropy change for thermodynamic systems.
		C204.3	Analyze performance of various Thermodynamic gas power cycles and gas refrigeration cycle and availability in each case.
		C204.4	Estimate the condition of steam and performance of vapour power cycle and vapour compression cycle.
		C204.5	Estimate Stoichiometric air required for combustion, performance of steam generators and natural draught

			requirements in boiler plants.
		C204.6	Use Psychromertic charts and estimate various essential properties related to Psychrometry and processes
202044	**Material Science**	C205.1	Able to understand and apply the fundamentals of materials (structure, properties and processing), for selecting, developing new material and process for real world problems.
		C205.2	Analyze different types of crystal structure, crystal imperfections and its effect on material properties.
		C205.3	To understands and analyze mechanical properties using destructive and nondestructive material testing techniques.
		C205.4	To articulate, utilize corrosion prevention strategies, surface modification techniques to estimate behavior of materials and components for real engineering problems.
		C205.5	To recognize how metals can be strengthened by cold-working and hot working process and their applications
Semester II			
202045	**Fluid Mechanics**	C206.1	Determine various properties of fluid
		C206.2	Apply the laws of fluid statics and concepts of buoyancy
		C206.3	Identify types of fluid flow and terms associated in fluid kinematics
		C206.4	Apply principles of fluid dynamics to laminar flow
		C206.5	Estimate friction and minor losses in internal flows and Determine boundary layer formation over an external surface
		C206.6	Construct mathematical correlation considering dimensionless parameters, also ABLE to predict the performance of prototype using model laws
202047	**Soft Skills**	C207.1	To analyse strength, weaknesses, opportunities and threats.
		C207.2	To learn communication, interaction and presentation of ideas.
		C207.3	To frame resumes and to understand corporate etiquettes.
		C207.4	To develop right attitudinal and behavioural change.
		C207.5	To learn working in team and to achieve team goals.
202048	**Theory of Machines-I**	C208.1	Identify mechanisms in real life applications
		C208.2	Perform kinematic analysis of simple mechanisms
		C208.3	Perform static and dynamic force analysis of slider crank mechanism
		C208.4	Determine moment of inertia of rigid bodies experimentally
		C208.5	Analyze velocity and acceleration of mechanisms by vector and graphical methods
202049	**Engineering Metallurgy**	C209.1	Able to describe how metals and alloys formed & how the properties change due to microstructure

		C209.2	To select materials for design and construction.
		C209.3	Able to recognizes how metals can be strengthened by alloying, cold-working, and heat Treatment
		C209.4	apply core concepts in Engineering Metallurgy to solve engineering problems
202050	**Applied Thermodynamics**	C210.1	Classify various types of Engines, to compare Air standard, Fuel Air and Actual cycles also make out various losses in real cycles.
		C210.2	Understand theory of carburetion, types of carburetors, modern carburetor.
		C210.3	To understand the main theory behind Internal Combustion Engine along with the understanding of all the components and systems used in the automotive systems and carry out the performance and emission in IC Engines. To understand Stages of Combustion in S. I. Engines and Theory of Detonation, Pre-ignition and factors affecting detonation.
		C210.4	Understand Fuel Supply system, Types of Injectors and Injection Pumps, Stages of Combustion in CI Engines, Criteria for good combustion chamber and types.
		C210.5	Carry out testing of I. C. Engines and analyze its performance also various harmful gases Emitted from exhaust and different devices to control pollution and emission norms for pollution control.
		C210.6	Describe construction and working of various I. C. Engine systems (Cooling, Lubrication, ignition, Governing, and Starting) also various types of reciprocating and rotary compressors with performance calculations of positive displacement compressors.
202051	**Strength of Material**	C211.1	Determine various strength properties of Material
		C211.2	Apply the concept of stress and strain and understand various stress and strain
		C211.3	Identify various types of stress and terms associated in elastic constants.
		C211.4	Apply transverse force on beam and understand SFD, BMD, bending and shear stresses.
		C211.5	Estimate torsional stresses and Determine critical load on column.
		C211.6	Construct geometrical Mohr's circle to predict the Principal stresses and predict behaviour of material under complex load.
202052	**Electrical and Electronics Engineering**	C212.1	Understand and apply different types of DC Machines And Speed control Methods
		C212.2	Distinguish and Analyse between different types of 3 phase IM And Characteristics
		C212.3	Understand and apply different types of special Purpose Motor
		C212.4	Apply programming concept to understand role of

			Microprocessor and Microcontroller in embedded systems
		C212.5	Develop interfacing of different types of sensors and other hardware devices with Atmega 328 microcontroller Atmega 328 based Arduino Board
		C212.6	Develop interfacing of different types of sensors and other motor devices with Atmega 328 microcontrollerAtmega328 based Arduino Board
202053	**Machine Shop**	C213.1	Utilize the Engineering knowledge to Perform welding using TIG/ MIG/ Resistance/Gas welding technique
		C213.2	Make Fibre-reinforced Composites by hand lay-up process or spray lay-up techniques
		C213.3	Take a part in Performing cylindrical/surface grinding operation and Evaluate its machining time
		C213.4	Determine number of indexing movements required and acquire skills to Produce a spur gear on a horizontal milling machine.
		C213.5	Elaborate industry visit report
		C213.6	Understand procedure of plastic processing