



ESWAR COLLEGE OF ENGINEERING

(Approved by AICTE, & Affiliated to JNTUK, A.P.)

KESANUPALLI (V), NARASARAOPETA-522549, AP

www.eswarcollegeofengg.org, email:eswarcollegeofengg@gmail.com

COURSE OUTCOMES

A.Y:- 2024-2025

Year/Sem: IIB.Tech I SEM

Course Name: NUMERICAL TECHNIQUES AND STATISTICAL METHODS	
Course Code: AME2101	
AME2101.1	Evaluate the approximate roots of polynomial and transcendental equations by different algorithms. Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals
AME2101.2	Apply numerical integral techniques to different Engineering problems.
AME2101.3	Apply discrete and continuous probability distributions
AME2101.4	Design the components of a classical hypothesis test
AME2101.5	Infer the statistical inferential methods based on small and large sampling tests
AME2101.6	Apply different algorithms for approximating the solutions of ordinary differential equations with initial conditions to its analytical computations

Course Name: UNIVERSAL HUMAN VALUES – UNDERSTANDING HARMONY AND ETHICAL HUMAN CONDUCT	
Course Code: AME2102	
AME2102.1	Define the terms like Natural Acceptance, Happiness and Prosperity (L1, L2)
AME2102.2	Identify one's self, and one's surroundings (family, society nature) (L1, L2)
AME2102.3	Apply what they have learnt to their own self in different day-to-day settings in real life (L3)
AME2102.4	Relate human values with human relationship and human society. (L4)
AME2125.5	Justify the need for universal human values and harmonious existence (L5)
AME2102.6	Develop as socially and ecologically responsible engineers (L3, L6)

Course Name: THERMODYNAMICS & THERMAL ENGINEERING	
Course Code: AME2103	
AME2103.1	Demonstrate understanding of the nature of the thermodynamic processes for pure substances of ideal gases.
AME2103.2	Interpret First Law of Thermodynamics and its application to systems and control volumes.
AME2103.3	solve any flow specific problem in an engineering approach based on basic concepts and logic sequences.
AME2103.4	compare and contrast between various types of refrigeration cycles
AME2103.5	Get exposed to the basics of heat transfer
AME2103.6	Able to know the modes of heat transfer



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Course Name: FLUID MECHANICS & HYDRAULIC MACHINES	
Course Code: AME2104	
AME2104.1	Able to know the basic concepts of fluid properties.
AME2104.2	Explain the mechanics of fluids in static and dynamic conditions.
AME2104.3	Clarify Boundary layer theory, flow separation and dimensional analysis.
AME2104.4	Describe Hydrodynamic forces of jet on vanes in different positions.
AME2104.5	Explain Working Principles and performance evaluation of hydraulic pump
AME2104.6	Describe Working Principles and performance evaluation of hydraulic turbines.

Course Name: COMPONENTS OF AUTOMOBILE CHASSIS	
Course Code: AME2105	
AME2105.1	Identify the different types of frame and chassis used inAutomotive.
AME2105.2	Able to know relate different types of drive lines and drives used inAutomotive.
AME2105.3	Acquire knowledge about different types of front axle and rear axles used in motor vehicles.
AME2105.4	Acquire knowledge about different types of rear axles used in motor vehicles.
AME2105.5	Examine the working principle of conventional and independent suspension systems .
AME2105.6	Apply knowledge on working principles of brake and its subsystems.

Course Name: FLUID MECHANICS & HYDRAULIC MACHINES LAB	
Course Code: AME2106	
AME2106.1	Understand calibration of flow measuring devices.
AME2106.2	Evaluate the losses in pipe flows.
AME2106.3	Apply the practical aspects of Bernoulli's principle
AME2106.4	Analyse the characteristics of different types of hydraulic turbines.
AME2106.5	Analyse the characteristics of different types of hydraulic pumps
AME2106.6	Able to know the Calibration of Venturimeter.



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Course Name: AUTOMOBILE CHASSIS LAB	
Course Code: AME2107	
AME2107.1	Able to know the understand working of braking and Suspension systems.
AME2107.2	Describe understand working of steering.
AME2107.3	Define understand working of clutch.
AME2107.4	Explain working of transmission.
AME2107.5	Differentiate various subsystems of two, three & Four wheeler vehicles
AME2107.6	Develop skills in Dismantling and assembling of chassis components.

Course Name: COMPUTER AIDED DRAFTING AND AUTOMOBILE ASSEMBLY DRAWING	
Course Code: AME2109	
AME2109.1	Interpret and analyse the national and international standards of various machine components.
AME2109.2	Apply and illustrate various machine elements through computer aided drawings.
AME2109.3	Apply limits and tolerances to assemblies and interpret the appropriate fits.
AME2109.4	Recognise the machining surface finish parameters through appropriate symbols.
AME2109.5	Creating solid models of complex machine parts and create sectional views
AME2109.6	Able to know the creation of 2D and 3D assembly drawings

Year/Sem: III B.Tech I SEM

Course Name: THEORY OF MACHINES	
Course Code: AME3101	
AME3101.1	Demonstrate the fundamentals of mechanisms and their applications and able to analyse the kinematic properties of mechanism such as displacement, velocity and acceleration
AME3101.2	Analyze the effect of friction in machines such as belt drives, clutches and brakes
AME3101.3	Able to know the the basic nomenclature of gears and analyze gear kinematics.
AME3101.4	Analyze velocity and acceleration
AME3101.5	Analysis of cam and demonstrate the balancing of any kinematic system
AME3101.6	Analyze different types of Vibrations



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Course Name: PRODUCTION TECHNOLOGY	
Course Code: AME3102	
AME3102.1	Able to design the patterns and core boxes for metal casting processes
AME3102.2	Able to design the gating system for different metallic components
AME3102.3	Describe the different types of welding processes
AME3102.4	Explain the Principles of Gating
AME3102.5	Learn about plastic deformation processes
AME3102.6	Explain about the Sheet metal forming

Course Name: VEHICLE DYNAMICS	
Course Code: AME3103	
AME3103.1	Able to know the different types of forces, loads and fundamental dynamics variables acting on vehicle
AME3103.2	Derivation of expression for braking and acceleration parameters on vehicle such as constant retardation wind resistance and having knowledge on brakes
AME3103.3	Determination of different types of road loads acting on a vehicle
AME3103.4	Describe rolling resistance and factors effecting on it
AME3103.5	Identify and understand the Vehicle response properties
AME3103.6	Derivation of steady state cornering parameters

Course Name: BASIC AUTOMOBILE ENGINEERING	
Course Code: AME3104	
AME3104.1	Able to know the course, shall learn about transmission,
AME3104.2	Learn about oil filters, oil pumps and crank case ventilation
AME3104.3	Analysis the steering
AME3104.4	Able to know the suspension system
AME3104.5	Explain the braking and safety
AME3104.6	Able to know the vehicle troubleshooting.

Course Name: TWO AND THREE WHEELERS	
Course Code: AME3105	
AME3105.1	Able to know the different frames
AME3105.2	Learn about suspension system
AME3105.3	Learn about transmission unit used in various two and three wheeler vehicles
AME3105.4	Describe ignition systems electrical & braking systems
AME3105.5	Explain about three wheeler vehicles
AME3105.6	Able to know the wheels and tyres



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Course Name: PRODUCTION TECHNOLOGY LAB	
Course Code: AME3106	
AME3106.1	Able to Design and manufacture simple patterns
AME3106.2	Control sand properties in foundry
AME3106.3	Operate arc welding, gas welding and resistance welding equipment
AME3106.4	Describe blow moulding and injection moulding equipment
AME3106.5	Able to know the sheet metal operations
AME3106.6	Explain brazing and soldering

Course Name: THEORY OF MACHINES LAB	
Course Code: AME3107	
AME3107.1	Able to Evaluate performance of a Hartnel governor
AME3107.2	Determine the frequencies of vibration in case of free and forced vibrations of a spring- mass system and whirling speed of a shaft
AME3107.3	Determine motion characteristics of a slider crank mechanism and cam-follower mechanism
AME3107.4	Demonstrate various mechanical power transmission devices
AME3107.5	Explain Components like screw jack and gears.
AME3107.6	Define moment of inertia of a flywheel

Course Name: VEHICLE DESIGN AND ANALYSIS LAB	
Course Code: AME3108	
AME3108.1	Able to visualize the automotive components with the help of modelling software.
AME3108.2	Make the modifications instantly if required at the initial stage itself.
AME3108.3	Demonstrate the knowledge on designing components to withstand the loads and deformations.
AME3108.4	Synthesize, analyze and document the design of the various components
AME3108.5	Demonstrate the ability to use engineering techniques for developing vehicle components with industry standards.
AME3108.6	Able to understanding Vehicle Aerodynamics



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Year/Sem: IVB.Tech I SEM

Course Name: SPECIAL PURPOSE VEHICLES	
Course Code: AME4101	
AME4101.1	Able to acquire the knowledge about the various equipments used in earth moving, applications.
AME4101.2	Understand the construction and working of the vehicle for constructional application
AME4101.3	Describe the working nature of farm equipment's based on their application.
AME4101.4	Discriminate the various industrial vehicles based on the purpose.
AME4101.5	Acquire the knowledge on the functioning of military vehicle.
AME4101.6	Able to Know material handlers, recliners, Street sweepers

Course Name: ELECTRIC VEHICLES AND HYBRID TECHNOLOGY	
Course Code: AME4102	
AME4102.1	Understand the architecture and vehicle dynamics of electric and hybrid vehicles
AME4102.2	Analyze and design various components of electric and hybrid vehicles with environment concern
AME4102.3	Knowledge on Energy requirement for electrical and hybride vehicles.
AME4102.4	Analyze and model the power management systems for electric and hybrid vehicles
AME4102.5	Knowledge on different types of machines used in ev
AME4102.6	Understand the Different subsystems of hybrid and electric vehicles

Course Name: AUTOMOBILE COMFORT SYSTEMS AND ERGONOMICS	
Course Code: AME4103	
AME4103.1	Describe engineering principle that underpins the design of an automotive vehicle for the comfort of the occupants and other road users.
AME4103.2	Recognize the future direction of the design of comfort systems within the automotive engineering sector.
AME4103.3	Appreciate the role and use of comfort systems in automobile engineering.
AME4103.4	Able Know about the safety systems in a vehicle
AME4103.5	Explain about the deformation behaviour of a vehicle.
AME4103.6	Understand the Ergonomic research methods / ergonomic audit



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Course Name: ADDITIVE MANUFACTURING	
Course Code: AME4103	
AME4104.1	Understand the principles of prototyping, classification of RP processes and liquid-based RP systems.
AME4104.2	Understand and apply different types of solid-based RP systems
AME4104.3	Apply powder-based RP systems
AME4104.4	Analyze and apply various rapid tooling techniques
AME4104.5	Understand different types of data formats.
AME4104.6	Explore the applications of AM processes in various fields

Course Name: OPERATIONS MANAGEMENT	
Course Code: AME4105	
AME4105.1	Apply appropriate forecasting techniques & Aggregate planning methods
AME4105.2	Learn Materials management analysis and scheduling policies
AME4105.3	Learn about the inventory control techniques, MRP and contemporary management techniques.
AME4105.4	Apply quality management principles proposed by Taguchi, Juran & Demigs
AME4105.5	Apply optimization to LP model & transportation.
AME4105.6	Apply optimization to assignment problems

Course Name: UNIVERSAL HUMAN VALUES : UNDERSTANDING HARMONY	
Course Code: AME4106	
AME4106.1	Able to become more aware of themselves, and their surroundings (family, society, nature)
AME4106.2	Able to know the responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
AME4106.3	Describe better critical ability. They would also become sensitive to their commitment towards
AME4106.4	Able to understand (human values, human relationship and human society).
AME4106.5	Able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.
AME4106.6	Desirable to follow it up by a) faculty-student or mentor-mentee programs throughout their time with the institution b) Higher level courses on human values in every aspect of living. E.g. as a professional



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Course Name: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING LAB	
Course Code: AME4107	
AME4107.1	Apply the knowledge of artificial intelligence models along with image classifiers.
AME4107.2	Apply the knowledge of machine learning models models along with image classifiers.
AME4107.3	Apply the knowledge of artificial intelligence models along with automatic facial recognition using various software tools.
AME4107.4	Apply the knowledge of machine learning models models along with automatic facial recognition using various software tools.
AME4107.5	Able to know the Data pre-processing and Building Decision Trees using Weka.
AME4107.6	Able to Understand the various options available in Weka.