

Syllabus for the post of Lecturer in Automobile Engineering

Manufacturing Technology: Casting Processes, welding processes, Forming and Shaping of Plastics, Machining, Basics of CNC machines

Thermodynamics and Thermal Engineering: Basic Thermodynamics, Air Standard Cycle and Compressors, Steam and Jet Propulsion, Refrigeration and Air-Conditioning, Heat Transfer

Automotive Powertrain: Engine, Fuels, Lubrication and Cooling System, Clutch and Gear Box, Final Drive and Modern Transmission, Wheels and Tyres

Strength of Materials: Stresses and Strains, Bending Moment and Shear Force in Beams, Flexure & Torsion in Beams, Deflection of Determinate Beams, Columns and Struts

Automotive Chassis: Types of Chassis layout, Steering Systems, Tyres and Wheels, Suspension System, Brake Systems

Fluid Mechanics: Fluid Properties, Fluid Statics, Fluid Dynamics, Flow through Pipes and Flow Measurement Devices, Fluid Machinery

Mechanics of Machines: Mechanisms, Kinematics, Force Analysis of Mechanism, Gears, Balancing, Vibration, Basic features of vibratory Systems

Engineering Design: Concepts of design, Design against Static and Fluctuating Load, Design of Shafts Couplings and Bearings, Springs, Riveted / Bolted and Welded Joints, Selection of Transmission Belts and Chains

Automotive Electrical and Electronics System: Batteries, Ignition System, Starting/Charging System, Lighting System, Accessories and Wiring

Automotive Transmission: Clutch, Gear Box, Automatic Transmission, Drive Line, Axle, Final Drive and Differential, Wheels and Tyres

Design of Vehicle Components: Design of Engine Components, Design of Clutch, Gear Box, Drive Line and Rear Axle, Design of Frame, Suspension, Front Axle and Steering, Design of Braking System, Design of Vehicle Body and Vehicle Interior against Ergonomics and Safety

Vehicle Dynamics: Earth and vehicle coordinate system. Longitudinal, lateral and vertical vehicle dynamics, Performance Mode, Ride Mode, Springing System, Handling Mode

Electric and Hybrid Vehicles: Electric Vehicles, Hybrid Vehicles, Electric Propulsion Systems, Energy Storage Devices, Fuel Cell and Solar Powered Vehicles

Automotive Pollution and Control: Emissions from SI and CI Engines, Emission Testing, Emission Control Techniques, Noise and Noise Control, Vibration Measurement and Control

Finite Element Techniques: Introduction to FEM, One Dimensional Analysis, Two Dimensional Analysis, Heat Transfer and Fluid Flow Analysis, Design of Automotive Structures

Vehicle Body Engineering: Ergonomics, Car Body Details, Truck and Speciality Passenger Vehicles, Vehicle Body Analysis, Design, Safety and Fatigue Aspects

Deputy Secretary
Haryana Public Service Commission

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