MECHANICAL DEPARTMENT - SYLLABUS

III – SEMESTER

MECHANICS OF MATERIALS :

To study the various mechanical properties of materials, calculate the deformation of materials subjected to axial and shear load-geometrical properties of sections and thin cylinders and thin spherical shells, different types of springs and this applications, power transmission by the belt, chain and gear drives.

MANUFACTURING PROCESSES :

Explain the various types of pattern, casting ,molding, hot working and cold working process, various casting processes, safety practice in welding process, powder metallurgy processes, heat treatment processes, working of lathe automatic lathe semi automatic lathe and its parts, various types of gauges used in industry.

FLUID MECHANICS AND FLUID POWER :

Explain the properties of fluids, working of pressure measuring devices, Bernoulli's theorem, frictional loss in flow through pipes, discharge through pipes, working principle of centrifugal pump-reciprocating pump-turbines, working of pneumatic, hydraulic system and their industrial application.

MACHINE DRAWING – CAD :

Explain the need of sectional view and types of views. Threaded fasteners and types, fits, tolerance and various types of mating parts, Using computer to create 2D drawings in auto CAD software.

MECHANICS OF MATERIALS AND FLUID MECHANICS LAB :

Study of calculating, stress, stain and hardness of various materials, coefficient of discharge of venturimeter and orifice meter, friction in pipes. Conduct performance test on centrifugal pump, reciprocating pump, impulse and reaction turbine.

WORKSHOP – I :

Study of identifying the various tools used in foundry, welding, and smithy, prepare sand mould for various pastern ,perform welding and smithy operation and safety practices.

IV- SEMESTER

APPLIED THERMODYNAMICS :

Explain the thermodynamic laws and thermodynamic process, different air cycles, energy equation for nozzles and condensers, types and functions of IC engines and the calorific value of fuels, modes of heat transfer and it evaluation, type of air compressor and their efficiency, working of gas turbines.

MACHINE SHOP TECHNOLOGY :

Explain the working and constructions of various machine tools like shaper, planner, slotter, milling machine, drilling machine, grinding machine and boring machine. Different types of cutters used and different operation performed in the machine tools, various types of jigs and fixtures, press working operation and non conventional machining operation.

ELECTRICAL AND ELECTRONICS ENGINEERING :

Explain the DC and AC circuits and Batteries , DC generator DC motor, Transformer and Alternator, Ac motors and electrical safety, Basic electronics and logic gates and programmable logic controller.

THERMO DYNAMICS LAB :

Calculate the flash point, fire point and viscosity of oil Identify the parts of petrol and diesel engine, boiler and their function ,performance test on petrol and diesel engines.

ELECTRICAL AND ELECTRONICS ENGINEERING LAB :

Explain ohm's law, calculate power and power factor in single phase circuit and efficiency of single phase transformer, DC shunt motor and induction motors, testing of half wave and full wave rectifier and various logic gates.

WORK SHOP-II :

To do job in lath, drilling and shaping machines and to study the work holding, tool holding devices and the safety Practices while machining.

V SEMESTER

DESIGN OF MACHINE ELEMENTS :

Explain the design consideration of machine parts and selection of materials, procedure for design, design of shaft design of bolt, pins ,keys, cotter joint and couplings, design of of belts, bearings, levers and gears.

THERMAL ENGINEERING :

Explain the various types of steam and their uses and expansion of steam, working and construction of boiler and their mountings and accessories, Thermal power plant, nuclear power plant, refrigeration and air-conditioning, conventional and non conventional energy.

METROLOGY MACHINE TOOL MAINTENANCE AND TESTING :

Explain the working principle of mechanical electrical and optical measuring instruments , standards of measurement and principles of measuring instrument, linear, angular and taper measurements , Measurements of threads and gears, measurement of surface finish and comparator, machine tool testing and maintenance.

ENGLISH COMMUNICATION PRACTICAL :

To develop the following skills to enhance the communicative potential of the students.

1. Listening 2,reading and pronunciation 3, speaking and presentation 4, writing.

METROLOGY, MACHINE TOOL MAINTENANCE & TESTING LAB :

Develop practical knowledge in, linear measurement Angular measurement, flow measurement, Dismantling and assembly of various machine tools and motor.

WORK SHOP – III

Machining component in planer, slotter, milling machine grinding machine, turret lathe, tool and cutter grinder and in CNC lathe, milling machine.

VI – SEMESTER

Explain different types of layout in a plant and plant safety, productivity improvement technique , work measurement technique ,Production planning and quality control, principles of arrangement and personal management, financial management and material management.

COMPUTER AIDED DESIGN AND MANUFACTURING :

Explain the uses of computer used in design a product and manufacturing, computer networking, concept of rapid proto typing, compare NC, CNC and DNC, turning centre, machining center and EDM machine and CMM , CNC part program develop for a part Robot.

AUTOMOBILE TECHNOLOGY:

Explain about the constructional details of a IC engines including cooling and lubricating systems, fuel feed systems power transmission system, steering and brake system electronic equipment used in automobile. Chases and their function, techniques for automobile pollution control.

COMPUTER AIDED DESIGN AND MANUFACTURING LAB:

Using computer to create 3d drawings, develop part program for CNC operation and simulate the program.

AUTOMOBILE LAB:

Identify the various tools and their application used in automobiles, Dismantle and assemble the various parts of automobile, trouble shoot the electrical circuits in automobile.

PROJECT WORK:

In order to encourage students to do worth wile and innovative projects and prove their knowledge and how to become a good entrepreneur , how to safe our environment and useful to our nation in a natural calamity.