

Department of Mechanical Engineering

B.E. 5th Sem

Course: Production Technology

Course Code: (5ME01)

At the end of Production Technology course the student will be able:

- CO 1:** To understand the concept of quality, quality control and total quality management.
- CO 2:** To illustrate the control charts for different variables and attributes.
- CO 3:** To analyze different process and charts used in industry.
- CO 4:** To calculate the correction and errors in measuring instrument.
- CO 5:** To design the manufacturing instrument used for linear and angular measurements.
- CO 6:** To describe different types of gauge used in quality control department.

Course: Heat Transfer

Course Code: (5ME02)

At the end of Heat Transfer course the student will be able:

- CO 1:** To solve steady state heat transfer problems of 1-D heat conduction with and without internal heat generation.
- CO 2:** To design and analyze the performance of extended surfaces.
- CO 3:** To describe heat transfer through insulation, design considerations and apply Lumped heat capacity method for analysis of unsteady state heat transfer.
- CO 4:** To explain the laws of radiation and its applications.
- CO 5:** To predict heat transfer coefficients for forced and free convection heat transfer applied to internal and external flow conditions.
- CO 6:** To design and analyze the performance of heat exchangers using NTU and LMTD methods.

Course: Measurement System

Course Code: (SME03)

At the end of Measurement System course the student will be able:

- CO 1:** To analyze different measurement systems.
- CO 2:** To calculate different errors in the measurement system.
- CO 3:** To use strain gauges for several needs.
- CO 4:** To measure and analyze forces and flows by using different measurement devices.
- CO 5:** To compare and analyze the different vibration measurement devices.
- CO 6:** To compare the various tachometers and measure speed of motors or rotating shafts by using tachometers.

Course: Theory of Machine-I

Course Code: (SME04)

At the end of Theory of Machine-I course the student will be able:

- CO 1:** To present the knowledge of basic parts of mechanisms and machines.
- CO 2:** To analyze the velocity and acceleration of plane mechanism.
- CO 3:** To synthesize the mechanism for engineering purpose equipment.
- CO 4:** To solve the problems of friction in equipment such as brakes, clutches and dynamometers.
- CO 5:** To design the cam profile and to select proper cam and follower mechanism
- CO 6:** To select appropriate gears for transmitting the power for required power and gear ratio.

Course: Project Management

Course Code: (5FEME05)

At the end of Project Management course the student will be able:

- CO 1:** To determine the causes of delay in projects
- CO 2:** To plan and coordinate the projects
- CO 3:** To prepare the budget of project with reduction in cost
- CO 4:** To schedule the project for proper utilization of resources
- CO 5:** To monitor the project to avoid overrun in the project
- CO 6:** To minimize the conflicts in project

B.E. 6th Sem

Course: Fluid Power-II

Course Code: (6ME01)

At the end of Fluid Power-II course the student will be able:

- CO 1:** To design and analyze the performance on Peloton, Francis and Kaplan turbines.
- CO 2:** To design and analyze the performance of Centrifugal Pumps.
- CO 3:** To analyze working principles of various pumps like axial flow pump, jet pump, hydraulic Ram and fundamentals of computational fluid dynamics.
- CO 4:** To design and analyze the performance of reciprocating pumps, rotary pumps and its other functioning units.
- CO 5:** To understand the mechanics of compressible fluid flow.
- CO 6:** To evaluate hydrostatic system, hydrokinetic system and their applications in real life engineering problems.

Course: Computer Software Application

Course Code: (6ME02)

At the end of Computer Software Application course the student will be able:

- CO 1:** To describe the basic concepts & the applications of database systems.
- CO 2:** To get familiar with a commercial relational database system (Oracle).
- CO 3:** To implement design principles for logical design of databases, the E-R method and normalization approach.
- CO 4:** To implement the basics of SQL and various SQL operations.
- CO 5:** To explain features of relational design along with various types of dependencies.
- CO 6:** To explain the models, languages, packages & modeling and simulation techniques.

Course: Control System Engineering

Course Code: (6ME03)

At the end of Control System Engineering course the student will be able:

- CO 1:** To classify feedback control systems and to explain modern control engineering tools necessary for engineering practice.
- CO 2:** To formulate the mathematical models of spring-mass-damper systems.
- CO 3:** To identify, formulate and solve control engineering problems using hydraulic and pneumatic systems.
- CO 4:** To analyze the stability of systems using Root Locus and Bode Plots.
- CO 5:** To describe the concept of transient response and steady state error.
- CO 6:** To design a control system or components to meet the desired needs.

Course: Theory of Machine-II

Course Code: (6ME04)

At the end of Theory of Machine-II course the student will be able:

- CO 1:** To solve problems in static and dynamic force analysis and to evaluate the forces in the links of mechanism.
- CO 2:** To apply theory of lubrication for different machine parts to minimize the friction.
- CO 3:** To solve the problems of Space mechanism and vehicle dynamics.
- CO 4:** To classify various types of vibrations and to solve the problems of natural, forced and damped vibrations.
- CO 5:** To apply the knowledge of Static & dynamic Balancing of Machine parts.

Course: Non-Conventional Energy Systems

Course Code: (6FEME05)

At the end of Non-Conventional Energy Systems course the student will be able:

- CO 1:** To explain various non-conventional energy sources like solar, wind, biomass, geothermal, ocean thermal etc. and their importance for the present energy scenario.
- CO 2:** To describe the basics of solar energy measurement, storage and utilization.
- CO 3:** To classify the methods of solar energy collection and different types of solar collectors.
- CO 4:** To explain the working of tidal, wind, ocean thermal and geothermal power plants.
- CO 5:** To compare various biomass energy resources and biomass conversion techniques.
- CO 6:** To describe the working of direct energy conversion techniques such as fuel cells and solar photovoltaic.

Course: Communication Skill

Course Code: (6ME06)

At the end of Communication Skill course the student will be able:

- CO 1:** To classify and explain basics concepts of Communication and its barriers.
- CO 2:** To become an active listener.
- CO 3:** To discuss ways of effectively speaking, public speaking.
- CO 4:** To present and speak effectively in public
- CO 5:** To face job interviews and group discussions,
- CO 6:** To read and write technical reports, proposals, research papers scientifically.