R20: Course Outcomes

R 20 Course outcomes

MATHEMATICS – I(Matrices and Calculus)

1. Write the matrix representation of system of linear equations and identify the consistency of the system of equations.

2. Find the Eigen values and Eigen vectors of the matrix and discuss the nature of the quadratic form.

3. Analyze the convergence of sequence and series.

4. Discuss the applications of mean value theorems to the mathematical problems, Evaluation of improper integrals using Beta and Gamma functions.

5. Examine the extrima of functions of two variables with/ without constraints.

ENGINEERING PHYSICS

1. Explain the crystal structure ofsolids

2. Understand various optical phenomena ofmatter

3. Explaintheworkingprincipleofopticalfibersandlasers

4. Interpret forced damped harmonicoscillations

5. Applytheknowledgeofmagneticbehaviorofmaterials

PHYSICS LAB

1. Apply optical phenomena to characterize optical sources and components.

2. Characterize semiconductors and semiconductor devices.

3. Study transient response of RC circuit.

4. Study the properties and resonance mechanisms in mechanical and electrical systems.

5. Evaluate the magnetic Induction along the axis of current carrying coil

ENGLISH

1. Infer the importance of scientific discoveries in promoting social responsibilities.

2. Comprehend the given texts and respond appropriately for technical and professional purposes.

3. Communicate confidently and transfer information into various forms of writing.

4. Understand the importance of health and nutrition for a better society.

5. Present various forms of business writing skills for successful careers.

ENGLISH LANGUAGE SKILLS LAB

1. Reproduce speech sounds and improve fluency in language.

2. Understand syllables and consonant clusters for appropriate pronunciation.

3. Exhibit effective professional skills with rhetoric eloquence.

4. Deliver enthusiastic and well-practiced presentation.

5. Learn Task-Based Language Learning (TBLL) through various language learning activities effectively.

PROGRAMMING FOR PROBLEM SOLVING – I

1. DesignAlgorithmsandFlowchartsforrealworldapplicationsusing'C'.

2. KnowtheusageofvariousoperatorsinProgramdevelopment.

3. Designprogramsinvolvingdecisionanditerationstructures.

4. ApplytheconceptscodereusabilityusingFunctions.

5. AnalyzevarioussearchingandsortingtechniquesusingArrays

PROGRAMMING FOR PROBLEM SOLVING LAB – I

1. Apply the specification of syntax rules for numerical constants and variables, data types.

2. Know the Usage of various operators and other C constructs.

3. Design programs on decision and control constructs.

4. Develop programs on code reusability using functions.

5. Implement various searching and sorting techniques using arrays

ENGINEERING GRAPHICS & MODELING

1. Understand the concepts of engineering drawing of planes, solids and the CAD drawing software.

2. Conceptualize and draw the projections of points and straight lines.

3. Visualize and project different views of a planes and solids.

4. Analyze given solids and represent sectional views.

5. Generate isometric and corresponding orthographic views of any given component.

MATHEMATICS – II

1. Classify the various types of differential equations of first order and first degree andapply the concepts of differential equations to the real world problems.

2. Solve higher order differential equations and apply the concepts of differential equations to the real world problems.

3. Find the Laplace Transform of various functions and apply to find the solutions ofdifferentialequations.

4. Evaluate the multiple integrals and identify the vector differential operators physically
in engineering problems.

5. Evaluate the line, surface and volume integrals and converting them from one to anotherby using vector integral theorems.

CHEMISTRY

1. Acquire knowledge of atomic, molecular and electronic changes related to conductivity.

2. Apply the various processes of treatment of water for both domestic and industrial purpose.

3. Apply the knowledge of electrode potentials for the protection of metals from corrosion.

4. Analyze the major chemical reactions that are used in the synthesis ofcompounds.

5. Apply the knowledge of polymers in every day'slife.

CHEMISTRY LAB

1. Determinationofparameterslikehardness,alkalinityandchloridecontentinwater.

2. Estimationofrateconstantofareactionfromconcentration-timerelationships.

3. Determinationofphysicalpropertieslikeadsorption,surfacetensionandviscosity.

4. Synthesizeasmalldrugmoleculeandanalyzeasaltsample.

5. Calculationofstrengthofcompoundusinginstrumentationtechniques.

ENGINEERING MECHANICS

1. Understand and apply the concepts of force, moment and their resolutions.

2. Analyze and apply the concepts of friction.

3. Calculate area and mass Moment of Inertia for given cross-sections.

4. Analyze the motion of bodies considering the cause of motion. Appreciate and apply the concept of Work-Energy method.

5. Understand the kinetics of rigid body in translation and rotation

ENGINEERING WORKSHOP

1. Understanding the tools and methods of using to fabricate engineering components

2. Applying the measuring techniques to verify the dimensional accuracy

3. Evaluating various methods and trades of workshop in the component building

ENGLISH COMMUNICATION SKILLS LAB

1. Understand the variants in pronunciation.

2. Identify the diverse purposes of listening and speaking.

3. Discuss ideas in diverse communicative settings.

4. Exhibit increased confidence in public speaking.

5. Display critical thinking, problem solving and decision making skills through GD's

PROGRAMMING FOR PROBLEM SOLVING – II

1. Identify various string handling functions in 'C'.

2. Develop programs with user defined data types.

3. Use Dynamic memory allocation functions with pointers.

4. Distinguish between Stacks and Queues.

5. Analyze various Dynamic Data Structures.

PROGRAMMING FOR PROBLEM SOLVING LAB – II

1. Build programs on various string handling functions.

2. Develop applications on user defined data types.

3. Apply dynamic memory allocation through pointers.

4. Implement linear data structures through stacks and queues.

5. Create linked list dynamically through stacks and queues.

NUMERICAL METHODS ANDPARTIAL DIFFERENTIAL EQUATIONS

1. Develop skills in solving engineering problems involving Algebraic and transcendental equations.

2. Acquires the knowledge of interpolation in predicting future out comes based on the present knowledge and also to fit different types of Curves.

3. To know various types of numerical methods in solving engineering problems.

4. Classify the nature of second and Higher order partial differential equations and find the solutions of linear and non linear PDE.

5. To apply Partial differential Equations in different engineering problems

MATERIALS TECHNOLOGY

1. Understand the structure of metals and constitution of alloys with phases.

2. Understand the basic concepts of phase transformation during solidification and phase diagrams.

3. Understand different heat treatment processes and their influence on properties of metals and alloys.

4. Understand classifications of steels, cast irons and their alloys. Analyze the structure and properties of different non-ferrous metals.

5. Evaluating the applications of composite and ceramic materials.

MECHANICS OF SOLIDS

1. Understand the concepts of stress, strain and material properties. Derive basic stress strain equations with appropriate assumptions.

2. Appreciate the concepts of shear force and bending moments. Generate shear force and bending moment diagrams for any given beam problem.

3. Determine the stresses and strains in the members subjected to bending and shear and interpret the stress distribution across various beams like rectangular, circular, triangular, I, T and angle sections.

4. Calculate and analyze principal stresses and strains. Determine the slope and deflection of beams under different types of loadings.

5. Analyze and compute stresses and strains in thin and thick cylinders

THERMODYNAMICS

Course Outcomes:

1. Identify thermodynamic systems, understand concepts of zeroth law, first law, work and heat interactions.

2. State and illustrate second law of thermodynamics. Identify and explain concepts of entropy, enthalpy, specific energy, reversibility, availability and irreversibility.

3. Understand the concepts of phase transformation of pure substance.

4. Appreciate the concepts of perfect gas laws. Analyze mixtures of perfect gases.

5. Understand power cycles and evaluate the performance.

PRODUCTION TECHNOLOGY

Course Outcomes:

1. Understand the basic concepts of casting processes to make different engineering components of industrial applications.

2. Differentiate the types of welding processes and decide which type of process to be selected for any given industrial application.

3. Recognize the differences between hot working and cold working processes and understand the processes of various forging operations.

4. Understand the basic principles of sheet metal operations and known the principles of drawing and extrusion processes.

5. Appreciate the process of high velocity forming and understand different types of plastics.

PROFESSIONAL COMMUNICATION

Course Outcomes:
A student learns:

1. Acquire enhanced personality

2. Exhibit appropriate professional etiquette

3. Practice team building with strong communication skills

4. Develop problem solving skills and decision-making

5. Demonstrate effective presentation skills

METALLURGY AND MECHANICS OF SOLIDS LAB

Course Outcomes:

1. Understand and identify microstructure of metals and measure their mechanical properties.

2. Analyze the microstructure and mechanical properties of metals by applying metallurgical principles.

3. Compare the hardness and mechanical properties of treated and untreated steels tested.

PRODUCTION TECHNOLOGY LAB

Course Outcomes

1. Understand the operating methods of welding mechanical press and moulding machines.

2. Measuring the properties of moulding sand.

3. Evaluate the quality of welded joints and products made by mechanical press.

ENVIRONMENTAL SCIENCE

Course Outcomes
Students will be able to:

1. Define and explain the structure and functions of ecosystem, value of biodiversity, threats and conservation of biodiversity.

2. Explain the limitations of the resources and impacts of over utilization of all natural resources.

3. Explain the sources and effects of environmental pollutions and list the available techniques to control the pollution.

4. Explain the global environmental issues like climate change, ozone hole and can explain the scope of EIA, Environmental Management Plan, environmental audit and list the EIA methods.

5. Mention the salient features of environmental acts and rules, define the sustainable goals along with measures required for the sustainability.

PROBABILITY AND STATISTICS

Course Outcomes:
After learning the contents of this course the students must be able to:

1. To differentiate among random variables involved in the probability models which are useful for all branches of engineering.

2. Derive relationship among variety of performance measures using probability distributions.

3. Acquire elementary knowledge of parametric and non parametric –tests and understand the use of observing state analysis for predicting future conditions.

4. Identify and examine situations that generate using problems and able to solve the tests of ANOVA for classified data.

5. Apply proper measurements, Indicators and techniques of Correlation and regression analysis.

BASIC ELECTRICAL ENGINEERING

Course Outcomes:
At the end of the course, students will be the able to

1. Understand basic principles of electrical elements.

2. Apply the concepts of AC Circuits to various elements and combinations

3. Examine Magnetic properties and principle of transformer

4. Contrast the working of DC Machines and Induction Motors.

5. Assess working principle of AC generator and electrical installations

MACHINE DRAWING & DRAFTING

Course Outcomes

1. Prepare the engineering drawings by employing conventional representation.

2. Develop the assembly drawings using part drawings of machine components.

3. Applying the drawing practice using solid works software.

KINEMATICS OF MACHINERY

Course Outcomes:

1. Understand working principles of different lower and higher pairs, mechanisms and their inversions.

2. Mathematical modeling of mechanisms to compute velocity and accelerations of links.

3. Understanding various steering gear mechanisms and Hooke's joint.

4. Appreciate different cams and followers used in mechanical systems.

5. Appreciate the concepts of velocity in gearing systems.

THERMAL ENGINEERING
Course Outcomes:

1. Understand the concepts of actual cycles and their analysis.

2. Analyze the combustion phenomenon in SI engines.

3. Analyze the combustion phenomenon in CI engines.

4. Understand the testing and performance of IC engines.

5. Know about the alternative fuels and appreciate the recent trends in IC engines.

MECHANICS OF FLUIDS AND HYDRAULIC MACHINES
Course Outcomes:

1. Understand fluid properties and fluid statics.

2. Understand the principles of flow and energy momentum equations.

3. Analyze the losses in pipe flow, boundary layer, separation of flows, forces on different vanes. Able to quantify the flow of fluid in flow measurement instruments.

4. Understand the working of hydraulic machinery and analyze their characteristic curves.

5. Appreciate the working principles of pumps and their applications

MECHANICS OF FLUIDS AND HYDRAULIC MACHINES LAB

Course Outcomes:

1. Test performance of different turbines.

2. Test performance of different pumps.

3. Evaluate the test results of hydraulic machinery with the standard reference values.

BASIC ELECTRICAL ENGINEERING LABORATORY

Course Outcomes:
At the end of the course, students will be the able to

1. Understand basic electrical laws.

2. Analyse the response of different types of electrical circuits to different excitations.

3. Apply electric laws and find out performance of various electrical machines

4. Asses the losses in electrical machines

GENDER SENSITIZATION

Course Outcomes:

1. Students will have developed a better understanding of important issues related to gender in contemporary India.

2. Students will be sensitized to basic dimensions of the biological, sociological, psychological and legal aspects of gender. This will be achieved through discussion of materials derived from research, facts, everyday life, literature and film.

3. Students will attain a finer grasp of how gender discrimination works in our society and how to counter it.

4. Students will acquire insight into the gendered division of labour and its relation to politics and economics.

5. Men and women students and professionals will be better equipped to work and live together as equals.

6. Students will develop a sense of appreciation of women in all walks of life.

7. Through providing accounts of studies and movements as well as the new laws that provide protection and relief to women, the textbook will empower students to understand and respond to gender violence.

METROLOGY & MACHINE TOOLS

Course Outcomes

1. Understand the mechanics of metal cutting and working principles of lathe machines.

2. Understand the working, classification, specifications and kinematic schemes of shaping, planing, drilling and boring machines.

3. Practicing the operations of milling, grinding, lapping, honing and broaching machines.

4. Understand the concepts of limits, fits and interchangeability. Design of GO and NO GO gauges.

5. Measuring different parameters of surface roughness and the working of Coordinate Measuring Machine.

DYNAMICS OF MACHINERY

Course Outcomes:

1. Understand gyroscopic effects of rotating bodies for aero planes, naval ships, automobiles, and two wheelers. Appreciate the working of brakes and dynamometers.

2. Compute frictional torque in clutches and understand the applications of Governors in mechanical systems.

3. Perform static and dynamic force analysis of planar mechanisms. Diagrammatically represent turning moment and design flywheels.

4. Understand how to balance rotating and reciprocating masses in different planes.

5. Perform calculations pertinent to several parameters of free and forced vibrations.

DESIGN OF MACHINE MEMBERS-I

Course Outcomes:

1. Understand the design procedure and selection of material for a specific application. Analyze the simple stresses and strains in components.

2. Appreciate variable stresses in mechanical components, fatigue analysis and fatigue theories of failure.

3. Design fastened joints like riveted and welded joints.

4. Design various joints like bolted joints, keys, cotter joints and knuckle joint.

5. Design shafts for strength and rigidity. Design rigid and flexible shaft couplings.

APPLIED THERMODYNAMICS

Course Outcomes:

1. Understand the working of steam power plants and boilers.

2. Perform Thermodynamic analysis of nozzles and condensers.

3. Analyze impulse and reaction steam turbines and subsequently apply to real time scenarios.

4. Understand working of different types of compressors and gas turbines.

5. Appreciate different types of propulsive engines and rockets.

AUTOMOBILE ENGINEERING

Course Outcomes:

1. Understand the components of automobile engines and appreciate the working of lubrication and cooling systems. Know about the fuel systems in SI engine and CI engines.

2. Appreciate the functions and importance of ignition and electrical systems.

3. Elucidate the working principles, types and importance of transmission and suspension systems.

4. Appreciate the working principles, types and importance of braking and steering systems.

5. Understand the environmental implications of automobile emissions and application of various alternative fuels.

MECHATRONICS

Course Outcomes:
Oncompletionofthecourse,thestudentwillbeableto:

1. interprettheimportanceofmechatronicsandelementsinvolved.

2. evolveatvariousdrivesfortypicalapplicationsinmechatronics

3. understandvariousdrivesandcircuits

4. predicttheimportanceandfunctioningofvariouselectroniccomponents.

5. choosevariousmechatronicelementstodesignmechatronicsbasedsystems

ADDITIVE MANUFACTURING
Course Outcomes:

1. Understand the working principle and process parameters of AM processes

2. Understand data formats of additive manufacturing

3. Appreciate Liquid-Based and Solid-Based additive manufacturing systems.

4. Apply the rudiments of Powder Based additive manufacturing Systems

5. Evaluate the applications of additive manufacturing in the industry

THERMAL ENGINEERING LAB/ METROLOGY & MACHINE TOOLS LAB

1. Understand the assembly/disassembly and their working of IC engines for performance measurement.

2. Evaluate performance parameters for consequent applications.

3. Perform the machining operations and the measurement of samples using instruments

ADVANCED COMMUNICATION SKILLS (ACS) LAB
Course Outcomes:

1. Develop sound communication skills in various situations with the help of enriched vocabulary.

2. Practice reading techniques for a faster and better comprehension.

3. Exhibit strong writing skills to express ideas effectively.

4. Demonstrate effective presentation skills.

5. Use appropriate verbal and non-verbal skills for a successful career.

PERSONALITY DEVELOPMENT AND BEHAVIORAL SKILLS
Course Outcomes:

1. Practice optimistic attitude for an efficient, socially viable and multi-faceted personality.

2. Demonstrate functions of non-verbal communication in formal context.

3. Build effective individual & team dynamics for professional accomplishments.

4. Analyze appropriate strategic Interpersonal Skills for productive workplace relationships.

5. Correspond in multiple contexts, for varied audiences, across genres and modalities.

DESIGN OF MACHINE MEMBERS – II
Course Outcomes

1. Understand different sliding contact and rolling contact bearings and perform design calculations

2. Analyze design considerations of IC engine parts like piston, connecting rod and cylinder

3. Appraise the design aspects of belt drives and springs

4. Design spur gear drives by calculating different parameters

5. Compute design parameters of helical gear drives

HEAT TRANSFER

Course Outcomes:

1. Understand the basic modes of heat transfer, steady and unsteady periodic heat transfer.

2. Solve 1-D problems of steady state and transient conduction heat transfer.

3. Appreciate concepts of convective heat transfer process and evaluate heat transfer coefficient for free and forced convection over exterior and interior surfaces with proper boundary conditions.

4. Applying the boiling and condensation principles in the heat transfer equipment design.

5. Analyze the performance of heat exchangers by LMTD and NTU methods. Appreciate radiation heat transfer scenarios.

MANAGERIAL ECONOMICS & AND FINANCIAL ANALYSIS
Course Outcomes:
At the end of the course the students are expected to

1. Understand the nature and scope of business economics.

2. Differentiate the various forms of Business organizations.

3. Identify the impact of economic variables on the Business firms

4. Analyze the Demand, Supply, Production, Cost, Market Structure, Pricing aspects

5. Analyze, compare and interpret the Financial Statements of a Company using ratios

FINITE ELEMENT METHOD

Course Outcomes:

1. Understand the basics of FEM, stress-strain relations and gain knowledge of Weighted Residual Methods and Variational Methods.

2. Solve 1-D problems by applying the pertinent boundary conditions.

3. Analyze and formulate finite element equations for 1-D planar truss element and beam element.

4. Solve 2-D problems using CST element and integration using Numerical Integration method.

5. Analyze and solve 1-D and 2-D heat transfer problems using FEM. Formulate Finite element equations for a stepped bar and a beam using dynamic analysis.

REFRIGERATION AND AIR CONDITIONING

Course Outcomes:

1. Understand the basic concepts of refrigeration and thermodynamically analyze air refrigeration systems.

2. Appreciate the working principle and thermodynamically analyze vapor compression refrigeration system.

3. Understand the working principles of vapor absorption and steam jet refrigeration systems.

4. Estimate the air conditioning load for comfort and industrial applications by applying the principles of psychrometry and design conditions.

5. Appraise Air Conditioning Systems and calculate the Cooling Load.

INDUSTRIAL MANAGEMENT

Course Outcomes:

1. Understanding the principles of management.

2. Compare various organizational structures for effective management

3. Apply the concepts of production management concepts

4. Evaluate the project in terms of time and method of execution for better quality

5. Applying the modern management concepts with scheduling techniques

AUTOMATION IN MANUFACTURING

Course Outcomes:

1. Summarize the facets of automation in a manufacturing activity.

2. Applying various elements like sensors, pneumatics, and hydraulics to append in manufacturing automation.

3. Design the assembly lines by considering the on line process analysis.

4. Evaluate the automation elements for low cost automation investment.

5. Applying the automation concepts in automobile and manufacturing sectors

HEAT TRANSFER LAB

1. Understand the structural features of heat transfer equipment and their mode of working.

2. Analyze the output responses by comparing with the heat transfer governing equations.

3. Evaluate the process parameters for designing the heat transfer devices.

COMPUTER AIDED ENGINEERING LAB

Course Outcomes:

1. Build FE models of mechanical components under various loading conditions.

2. Understand conductive and convective heat transfer analysis of 1-D & 2-D components.

3. Evaluate Modal analysis of beams, plates and shells for natural frequencies and mode shapes with different elements

QUANTITATIVE METHODS & LOGICAL REASONING

Course Outcomes :
At the end of the completion of the course a student is expected –

1. To perform well in various competitive exams and placement drives.

2. To solve basic and complex mathematical problems in short time.

3. To become strong in Quantitative Aptitude and Reasoning which can be applied for GRE, GATE, GMAT or CAT exam also.

4. To develop problem solving skills and analytical abilities, which play a great role in corporate and industry set up.

INSTRUMENTATION AND CONTROL SYSTEMS

Course Outcomes:
1. Define basic terms related to measurements, understand displacement measurement techniques.
2. Understand working principles of pressure and temperature measuring instruments.
3. Appraise the working of various flow, level, and speed measurement instruments.
4. Model and analyze acceleration, vibration, stress, strain, force, torque and power measuring methods.
5. Understand control systems and their applications.

CAD/CAM

Course Outcomes:
1. Appreciate CAD/CAM principles and know the various input and output peripherals of computers. Understand concepts of computer graphics.
2. Develop mathematical models to represent curves, surfaces and solids.
3. Understand numerical control systems and develop CNC part programs. Appraise the rudiments of Group Technology.
4. Understand Computer Aided Quality Control and Computer Integrated Manufacturing Systems.
5. Applying FMS concepts for production of engineering components.

ROBOTICS

Course Outcomes:
After completion of the course, student will be able to:
1. Understand the basic concepts of robotics and know the components of industrial robots.
2. Derive forward and inverse kinematic models for robots.
3. Decide upon the selection of actuators and sensors for robots.
4. Appreciate different programming techniques and languages for robots.
5. Comprehend industrial applications and work cell design of robots.

GAS DYNAMICS

Course Outcomes:
1. Understanding the features of different flows.
2. Comparing the flow in different cross sectional arcos.
3. Apply gas dynamics principles to Jet propulsion system.
4. Evaluate the effects with and without shocks during flow.
5. Designing the aviation components using gas dynamics principles

PRODUCTION AND OPERATIONS MANAGEMENT

Course Outcomes:
1. Understand the importance of production and operations management for getting the competitive edge.
2. Analyze the factors effecting plant location and the volume of production to be made.
3. Apply the value engineering and work study method to standardize the

manufacturing activity.
4. Evaluate the project management techniques to improve overall productivity.
5. Designing the production systems with the effective PPC principles

OPERATIONS RESEARCH

Course Outcomes:
1. Model the real life situations with mathematical models. Understand the concept of linear programming.
2. Solve transportation and assignment problems.
3. Understand the various waiting lines and replacement concepts.
4. Identify and apply game theory and inventory models.
5. Apply Sequencing shop floor problems and network scheduling models.

ENERGY CONSERVATION AND MANAGEMENT

Course Outcomes:
1. Understand the energy data to carry out audit.
2. Identifying the electrical, thermal and other systems with their energy consumption.
3. Perform energy audit of consumption of industries.
4. Evaluate the energy consumption of units by the economic concepts.
5. Designing the mechanical systems employing energy conservation

FLUID POWER SYSTEMS

Course Outcomes:
1. Understand the properties fluid and fluid power systems.
2. Apply accessories and valves in the systems for effective functioning.
3. Design and analyze typical hydraulic circuits.
4. Evaluate the systems with different control units.
5. Designing the modern fluid power systems with the hydraulic principles

CAD/CAM LAB

Course Outcomes:
1. Understand the usage of relevant software and the syntax of CNC part program.
2. Develop the 2D, 3D models and conduct the analysis.
3. Evaluate the veracity between manual part program and the automated part program.

PRODUCTION DRAWING PRACTICE AND INSTRUMENTATION LAB

1. Understanding the symbols and their representation on drawings.
2. Calibrate the measuring devices and analyze the errors in measurement.
3. Evaluate the instruments in terms of accuracy and precision.

INDUSTRY ORIENTED MINI PROJECT

Course Outcomes:
1. Apply the engineering principles in the execution of a sub system under mechanical engineering domain.
2. Predict and solve the related issues of the sub system.
3. Evaluate the effectiveness of the sub systems the light of technical, ethical and other standards.

PRODUCTION PLANNING & CONTROL

Course Outcomes:
1. Understand the basic concepts of production planning and control.
2. Appreciate principles and importance of forecasting techniques.
3. Analysis of various inventory management and control systems. Plan the stock required based on various methods like MRP, ERP, LOB, JIT and other Japanese concepts.
4. Know the factors of routing and schedule. Apply standard scheduling methods and line balancing.
5. Appreciate dispatching procedure and application of computer in production planning and control.

UNCONVENTIONAL MACHINING AND PROCESSES

Course Outcomes:
1. Understand the need, importance and classification of various unconventional machining processes.
2. Appreciate basic principles and process parameters of ultrasonic, water jet and abrasive jet machining processes.
3. Appreciate thermal energy based machining processes with emphasis on surface finish and accuracy.
4. Appraise different chemical material removal processes.
5. Understand electron beam machining and plasma arc machining along with applications.

TECHNICAL SEMINAR

Course Outcomes:
1. Synthesizing information on any one specialized topic from text books, peer revised journals, hand books and other technical resources.
2. Generation a technical seminar report comprising of all relevant information with stipulated standards.
3. Judge the veracity of the topic with various time domains

COMPREHENSIVE VIVA VOCE

Course Outcomes:
1. Revise the mechanical engineering principles postulations and other technical information in order to apply in various conditions.
2. Explain the relevance of a technical note for a given application.
3. Collate and justify the design by the acquired comprehensive technical knowledge and skill.

MAJOR PROJECT

Course Outcomes:
1. Develop a model comprising of real time application in the industry.
2. Design a system under the domain of mechanical engineering.
3. Evaluate for simulation design, analysis and manufacturing facts of the system.