

Department of Mechanical Engineering

Course Name: Basic Mechanical Engineering

Course Code: BMET-101

Year of Study: 1st Year

Semester: 1st

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
BMET-101.1	Understand Concept of measurements and how to measure Temperature, Pressure, Velocity, Flow strain etc.	Understand	B.L-1
BMET-101.2	Apply basics of fluid mechanics and analysis of Bernoulli's equation for incompressible fluid.	Apply	B.L-2
BMET-101.3	Analyze different laws of thermodynamics, their limitation and applicability in Engineering field	Analyze	B.L-3
BMET-101.4	Understand the Classification and working of boilers	Understand	B.L-1
BMET-101.5	Evaluate the thermal efficiency of different engines	Evaluate	B.L-4

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 - Create)

Department of Mechanical Engineering

Course Name: Basic thermodynamics Course Code: BMET-302

Year of Study: 2nd

Semester: 3rd

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
BMET-302.1	Understand fundamental knowledge of laws and principles of thermodynamics.	Understand	B.L-1
BMET-302.2	Apply the knowledge of heat and work transfer and their effect, application of first law of thermodynamics to different machines as well as second law of thermodynamics.	Apply	B.L-2
BMET-302.3	Analyze the knowledge of steady flow energy equation and its use in compressor, turbines, nozzles, evaporators etc	Analyze	B.L-3
BMET-302.4	Evaluate the quality of energy and its balance	Evaluate	B.L-4
BMET-302.5	Analyze about conversion of heat into work from different cycle	Analyze	B.L-3

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 - Create)

Department of Mechanical Engineering

Course Name: Materials Science & Technology Course Code: BMET-303

Year of Study: 2nd

Semester: 3rd

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
BMET-303.1	Analyze the Structure of materials at different levels, basic concepts of crystalline materials like unit cell, FCC, BCC, HCP, APF (Atomic Packing Factor), Co-ordination Number etc.	Analyze	B.L-3
BMET-303.2	Understand concept of mechanical behavior of materials and calculations of same using appropriate equations.	Understand	B.L-1
BMET-303.3	Understand the concept of phase & phase diagram & understand the basic terminologies associated with metallurgy.	Understand, Analyze	B.L-1
BMET-303.4	Understand and suggest the heat treatment process & types. Significance of properties Vs microstructure. Surface hardening & its types. Introduce the concept of hardenability & demonstrate the test used to find hardenability of steels	Understand, Evaluate	B.L-1
BMET-303.5	Understand the various Non-Metallic Materials and their uses.	Understand	B.L-1

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 - Create)

Department of Mechanical Engineering

Course Name: Manufacturing Science & Technology-I Course Code: BMET-305

Year of Study: 2nd

Semester: 3rd

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
BMET-305.1	Different manufacturing processes, material and their properties.	Understand	B.L-1
BMET-305.2	Apply the fundamentals of solid mechanics and fluid mechanics to calculate different parameters in manufacturing processes.	Apply	B.L-2
BMET-305.3	Analyze the manufacturing processes i e casting, forming and sheet metal etc	Analyze	B.L-3
BMET-305.4	Justify the selection of a particular process and material to manufacture the product	Evaluate	B.L-4
BMET-305.5	Design and execute the manufacturing process to create the product based on need analysis.	Create	B.L-3

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 - Create)

Course Name: Strength of Material

Course Code: BMET-304

Year of Study: 2nd

Semester: 3rd

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
BMET-304.1	Understand selection of material according to their use and loading conditions.	Understand	B.L-1
BMET-305.2	Solve problems of with various types of loading and corresponding stresses induced in the materials.	Apply	B.L-2
BMET-305.3	Analyze the failure of materials under different loading conditions.	Analyze	B.L-3
BMET-305.4	Evaluate magnitude and direction of various stresses for the safe design.	Evaluate	B.L-4
BMET-305.5	Design the mechanical components according to the failure stresses for the different types of materials using various theories of failures.	Create	B.L-5

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 - Create)

Course Name: Cyber Security

Course Code: BCST-308

Year of Study: 2nd

Semester: 3rd

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
BCST-308.1	Understanding of the concepts and foundations of computer security, and identify vulnerabilities of IT systems.	Understand	B.L-1
BCST-308.2	Implement cyber security solutions and use of cyber security, information assurance, and cyber/computer forensics software/tools.	Apply	B.L-2
BCST-308.3	Analyze software vulnerabilities and security solutions to reduce the risk of exploitation, Comprehend and execute risk management processes, risk treatment methods, and key risk and performance indicators.	Analyze	B.L-3
BCST-308.4	Design and develop security architecture for an organization and operational and strategic cyber security strategies and policies. Evaluate the cyber security needs of an organization.	Evaluate	B.L-4
BCST-308.5	Use basic security tools to enhance system security and can develop basic security enhancements in stand-alone applications.	Understand	B.L-1

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 - Create)

Course Name: Applied Thermodynamics

Course Code: BMET-401

Year of Study: 2nd

Semester: 4th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
BMET-401.1	Draw the layout of thermal power plant	Understand	B.L-1
BMET-401.2	Explain the working of different component used in thermal power plant like boiler, turbine, condenser etc	Understand	B.L-1
BMET-401.3	Apply first and second law of thermodynamics to different device like turbine, compressor etc	Apply	B.L-2
BMET-401.4	Analyze the performance of thermodynamics parameter on the efficiency of thermal power plant.	Analyze	B.L-3
BMET-401.5	Evaluate the efficiency of thermal power plant using rankine cycle.	Evaluate	B.L-4

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 - Create)

Course Name: Fluid Mechanics

Course Code: BMET-404

Year of Study: 2nd

Semester: 4th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
BMET-404.1	Understanding of basics of fluid mechanics their functioning & selection. Students will be able to state the Newton's law of viscosity and to explain the mechanics of fluids at rest and in motion by studying the fluid flow phenomenon.	Understand	B.L-1
BMET-404.2	Compute force of buoyancy on a partially or fully submerged body. Students are able to apply knowledge in the design or dams, design of flying bodies and fluid flow.	Apply	B.L-1
BMET-404.3	Analyze the fluid flow problems and stability of a floating body. Students will be able to examine energy losses in pipe transitions and sketch energy gradient lines.	Analyze	B.L-3
BMET-404.4	Evaluation of forces drag and lift on immersed bodies. Evaluate pressure drop in pipe flow using Hagen-Poiseuille's equation. Students will be able to evaluate hydrostatic pressure and force on plane and curved surface.	Evaluate	B.L-4
BMET-404.5	Create engineering approach to problem solving based on acquired physics and mathematical knowledge. Students are able to design the models using the similitude concept. This subject will enhance the capability of design, manufacturing and testing of new equipments.	Create	B.L-5

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 - Create)

Course Name: ENERGY & ENVIRONMENT

Course Code: BECT-402

Year of Study: 2nd

Semester: 4th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
BECT-402.1	Understanding of different component of environment and their function and sustainable development.	Understand	B.L-1
BECT-402.2	Apply the knowledge to develop various solid waste disposal devices, effluent treatment plants etc	Apply	B.L-2
BECT-402.3	Identify the solutions related to the environmental problems like air pollution, water pollution etc	Analyze	B.L-3
BECT-402.4	Analyze performance of the newer and cleaner technologies developed for the protection of the environment.	Evaluate	B.L-4
BECT-402.5	Evaluate and calculate emissions into air from fossil fuels plants and technologies for emission reduction in electricity production to air from combustion	Evaluate	B.L-4

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 - Create)

Course Name: Theory of Machine

Course Code: BMET-403

Year of Study: 2nd

Semester: 4th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
BMET-403.1	Understand the principles of kinematic pairs, chains and their classification, DOF, inversions, equivalent chains and planar mechanisms.	Understand	B.L-1
BMET-403.2	Make use of different methods to determine the velocity and acceleration in planar mechanisms.	Apply	B.L-1
BMET-403.3	Analyze balancing problems in rotating and reciprocating machinery.	Analyze	B.L-3
BMET-403.4	Evaluate gear tooth geometry and select appropriate gears for the required applications.	Evaluate	B.L-4
BMET-403.5	Construct the cam profile for specific follower motion.	Create	B.L-5

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 - Create)

Course Name: Heat and Mass Transfer

Course Code: TME-505

Year of Study: 3rd

Semester: 5th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-505.1	Knowledge of different modes of heat transfer and knowledge of heat transfer in different industrial process	Understand	B.L-1
TME-505.2	Use of principle of heat transfer in cold storages and air conditioning of buildings from different sources and impact of heat transfer	Understand	B.L-1
TME-505.3	Understanding of materials for maximum heat transfer, different conditioning and insulating materials used in heat transfer processes.	Apply	B.L-2
TME-505.4	Describe the real time applications of fluid medium heat transfer	Analyze	B.L-3
TME-505.5	Use of principle of heat transfer in cold storages and air conditioning of buildings from different sources and impact of heat transfer	Evaluate	B.L-4

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 - Create)

Course Name: Machine Design-I

Course Code: TME-502

Year of Study: 3rd

Semester: 5th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-502.1	Understand the different standards in design and selection of materials for static and fatigue load	Understand	B.L-1
TME-502.2	Apply the knowledge gained in solid mechanics in designing of joints, shafts, keys and coupling along with design against static and fluctuating load.	Apply	B.L-2
TME-502.3	Apply the knowledge gained in solid mechanics in design machine elements to withstand the loads and deformation.	Apply	B.L-2
TME-502.4	Analyze the Design of power screw, mechanical springs and introduction to product development & design process.	Analyze	B.L-3
TME-502.5	Evaluate the design of screwed and welded joints against static and fluctuating loads.	Evaluate	B.L-4

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 - Create)

Course Name: Manufacturing Science-II

Course Code: TME-504

Year of Study: 3rd

Semester: 5th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-504.1	Define the machining and its types and welding processes	Understand	B.L-1
TME-504.2	Demonstrate knowledge on different machine practically	Analyze	B.L-3
TME-504.3	Calculate the different parameters in machining	Evaluate	B.L-4
TME-504.4	Analyze the all type of machining process	Analyze	B.L-3
TME-504.5	Design the job to able to manufacture it using machining ,welding etc	Create	B.L-5

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 – Create)

Course Name: Dynamics of Machine

Course Code: TME-503

Year of Study: 3rd

Semester: 5th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-503.1	By the end of this course student will be able to understand the force-motion relationship in components subjected to external forces and analysis of standard mechanisms.	Understand	B.L-1
TME-503.2	By the end of this course the students will be able to calculate the unbalancing under static and dynamic loading, friction losses, torque transmission and turning moment in different parts of the machinery.	Apply	B.L-3
TME-503.3	By the end of this course students will be able to analyze the stabilization of sea vehicles, aircrafts and automobile vehicles.	Evaluate	B.L-4
TME-503.4	By the end of this course students will be able to justify the undesirable effects of unbalances resulting from prescribed motions in mechanism and the concept of gyroscopic effects.	Analyze	B.L-3
TME-503.5	By the end of this course students will be able to analyze and design of flywheel and centrifugal governors.	Create	B.L-5

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 – Create)

Course Name: Mechanical Vibration

Course Code: TME-501

Year of Study: 3rd

Semester: 5th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-501.1	Define the basic fundamentals of mechanical vibrations.	Understand	B.L-1
TME-501.2	Understand the principle of various vibration measuring instruments.	Understand	B.L-3
TME-501.3	Formulate mathematical models of problems in vibrations using Newton, Rayleigh and energy principles.	Evaluate	B.L-4
TME-501.4	Analyze the tensional vibration of different system using mathematical model.	Analyze	B.L-3
TME-501.5	Design and execute the analytical procedure to create the solutions based on need analysis	Create	B.L-5

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 – Create)

Course Name: Operation research

Course Code: TME-601

Year of Study: 3rd

Semester: 6th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-601.1	Define and formulate linear programming problems and appreciate their limitations	Understand	B.L-1
TME-601.2	Explain the importance of optimization technique used in industry.	Understand	B.L-1
TME-601.3	Solve linear programming problems using appropriate techniques and optimization solvers, interpret the results obtained and translate solutions into directives for action.	Apply	B.L-2
TME-601.4	Analyze post-optimal and sensitivity analysis and explain the primal-dual relationship	Analyze	B.L-3
TME-601.5	Evaluate better decisions in complex scenarios	Evaluate	B.L-4

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 – Create)

Course Name: MACHINE DESIGN-2

Course Code: TME-602

Year of Study: 3rd

Semester: 6th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-602.1	Understand the basic principles of gears and bearing design for static and fatigue load.	Understand	B.L-1
TME-602.2	Understand the basics of machine elements used in machine design to withstand the loads and deformations for a given application, while considering additional specifications.	Understand	B.L-1
TME-602.3	Evaluate the forces on gears and IC Engine parts.	Evaluate	B.L-4
TME-602.4	Analyze a design problem successfully and decide when there is not a unique answer.	Analyze	B.L-3
TME-602.5	Create the design and execute the analytical procedure to design gears, bearings and IC Engine parts.	Create	B.L-4

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 – Create)

Course Name: MACHINE DESIGN-2

Course Code: TME-603

Year of Study: 3rd

Semester: 6th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-603.1	Understand the basic principles of gears and bearing design for static and fatigue load.	Understand	B.L-1
TME-603.2	Understand the knowledge on basic machine elements used in machine design; design machine elements to withstand the loads and deformations for a given application, while considering additional specifications.	Understand	B.L-1
TME-603.3	Evaluate the forces on gears and IC Engine parts.	Evaluate	B.L-4
TME-603.4	Analyze a design problem successfully and decide when there is not a unique answer.	Analyze	B.L-3
TME-603.5	Design and execute the analytical procedure to design gears, bearings and IC Engine parts.	Create	B.L-4

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 – Create)

Course Name: IC ENGINE

Course Code: TME-602

Year of Study: 3rd

Semester: 6th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-602.1	Define basic concepts of actual cycles and its analysis	Understand	B.L-1
TME-602.2	Define the fundamental concepts of IC engine and its working principles.	Understand	B.L-1
TME-602.3	Understand the importance of alternative fuels.	Understand	B.L-1
TME-602.4	Evaluate performance of IC engines.	Evaluate	B.L-4
TME-602.5	Describe the combustion phenomenon in SI and CI engines.	Understand	B.L-1

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 – Create)

Course Name: Fluid Machinery

Course Code: TME-604

Year of Study: 3rd

Semester: 6th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-604.1	Understanding of basics of fluid machinery their functioning.	Understand	B.L-1
TME-604.2	To derive and apply general governing equations for fluid flow in turbines.	Apply	B.L-2
TME-604.3	To select and analyze an appropriate turbine with reference to given situation in power plants. To understand and analyze the characteristic curves of turbine and pumps.	Analyze	B.L-3
TME-604.4	Evaluate the performance characteristics of hydraulic turbines and pumps.	Evaluate	B.L-4
TME-604.5	Enhance capability to create design, manufacture, selection and testing of new Equipment	Create	B.L-5

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 – Create)

Course Name: Refrigeration and Air Conditioning

Course Code: TME-605

Year of Study: 3rd

Semester: 6th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-605.1	Understand required and various methods of refrigeration. They would be able to understand properties of moist air also	Understand	B.L-1
TME-605.2	Solve problems of various conditions of refrigerants on suction and delivery sides like wet, saturated, superheated and subcooled.	Apply	B.L-2
TME-605.3	Analyze various configurations of vapour compression refrigeration systems	Analyze	B.L-3
TME-605.4	Evaluate cooling and heating loads	Evaluate	B.L-4
TME-605.5	Design any refrigeration system	Create	B.L-5

B.L - Bloom's Taxonomy Levels

(1- Understand, 2 - Apply, 3 - Analyze, 4 - Evaluate, 5 - Create)

Course Name: CAD/CAM

Course Code: TME-701

Year of Study: 4th

Semester: 7th

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-701.1	Understand the structure of CAD workstation, Memory types, input/output devices and computer graphics.	Understand	B.L-1
TME-701.2	Acquire knowledge of Geometric modeling, drawing algorithms as well as mathematical representation of curves. Students will be able to perform transformations in 2D and 3D objects.	Apply	B.L-2
TME-701.3	Understand various applications of CAD software and part programming.	Understand	B.L-1
TME-701.4	Apply knowledge of finite element methods for solving a problem mathematically and on softwares.	Analyze	B.L-3
TME-701.5	Create program for milling, drilling and lathe machines. Students will be able to evaluate the stress, forces etc in mechanical components mathematically and on software.	Create, Evaluate	B.L-4

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 – Create)

Course Name: Maintenance & Safety Engineering

Course code TME-702

Year of Study: 4

Semesters: VII

Course outcomes: The student will be able to:

Sub	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-702.1	Describe the various categories of maintenance.	Remember	B.L-1
TME-702.2	Understand the principles and objectives of Maintenance Engineering.	Understand	B.L-2
TME-702.3	Introduction to engineering industry, safety in engineering industry along with maintenance management is studied. Apply the concept of industrial process safety.	Apply	B.L-3
TME-702.4	Different maintenance strategies and the preventive inspection of equipment used in emergency, replacement planning, and replacement of items is studied.	Analyze	B.L-4
TME-702.5	By the end of this course student will be able to discuss the various parameters of life testing of components such as MTTF,MTBF and reliability.	Evaluate	B.L-5

B.L - Bloom's Taxonomy Levels

(1- Understand, 2 - Apply, 3 - Analyze, 4 - Evaluate, 5 - Create)

Course Name: Energy Conservation

Course code TME-703

Year of Study: IV

Semester: VII

Course outcomes: The student will be able to:

Sub	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-703.1	Understand the different types of energy audit and its components, fuel analysis including insulation type and application of refractory.	Understand	B.L-1
TME-703.2	Apply knowledge of different types of energy auditing in different types of customer side application with use of insulation and refractories for high energy generation or consumptions devices like power plants.	Apply	B.L-2
TME-703.3	Analyze the principal components and types of Steam Distribution System and its components and application of Co-generation and Tri-Generation	Analyze	B.L-3
TME-703.4	Analyze and estimate different efficiencies associated with power plant systems. Design and Evaluate concept of Compressed Air System (CAS), Pumping System and various WHR Systems	Evaluate	B.L-4
TME-703.5	Develop understanding with Knowledge of electrical system including power, star-delta connection, power factor and introduction to electric motors.	Understand	B.L-1

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 – Create)

Course Name: Entrepreneurship development Program

Course code TOE-05

Year of Study: IV

Semester: VII

Course outcomes: The student will be able to:

TOE-05.1	Understand the basic knowledge of entrepreneurship and types of industry.	Understand	B.L-1
TOE-05.2	Understand the systematic process to select and screen a business idea.	Understand	B.L-1
TOE-05.3	Analyze project/idea and further able to evaluate the project requirements.	Apply, Analyze	B.L-2
TOE-05.4	Understand the basics of accountancy and project planning and control.	Understand	B.L-1
TOE-05.5	Understand about labour laws and other laws concerning entrepreneur.	Understand	B.L-1

B.L – Bloom’s Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 – Create)

Course Name: Advanced welding Technology

Course Code: TME -014

Year of Study: IV

Semester: VII

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-014.1	Students will understand the advanced welding practices in Industries and their comparative merits and demerits.	Understand	B.L-1
TME-014.2	Apply the knowledge of advanced welding process in developing critical weldments both for structures and machine parts which are subjected to special service conditions.	Apply	B.L-2
TME-014.3	Students will be able to analyze the performance of welded joints done with different welding processes.	Analyze	B.L-3
TME-014.4	Students will be able to evaluate potential hazards and apply procedures to maintain work place safety; demonstrate appropriate safe work habits when operating oxy fuel, plasma and electric welding equipment and function safely in a welding environment	Evaluate	B.L-4
TME-014.5	Students will be prepared to demonstrate technical understanding of new technology and processes in the welding industry	Understand	B.L-1

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 – Create)

Course Name: Power Plant Engineering

Course Code: TME- 801

Year of Study: IV

Semester: VIII

Course Outcomes: The student will be able to:

Sub	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-801.1	Improve Understanding of Thermal Power Plant Operations and applications, turbine governing, different types of high pressure boilers including supercritical and supercharged boilers, Fluidized bed combustion systems.	Understand	B.L-1
TME-801.2	Describe basic working principles of gas turbine and diesel engine power plants. Define the performance characteristics and components of such power plants.	Apply	B.L-2
TME-801.3	Analyze the principal components and types of nuclear reactors. List types, principles of operations, components and applications of steam turbines, steam generators, condensers, feed water and circulating water systems.	Analyze	B.L-3
TME-801.4	Analyze and estimate different efficiencies associated with power plant systems. Design and Evaluate concept of chimney in thermal power plants, knowledge of cooling tower operation, numerical on surface condenser design.	Evaluate	B.L-3
TME-801.5	Understand the Basic knowledge of Different types of Nuclear power plants including Pressurized water reactor, boiling water reactor, gas cooled reactor, liquid metal fast breeder reactor. Understanding of Power Plant Economics, Energy Storage including compressed air energy and pumped hydro etc.	Understand	B.L-1

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 – Create)

Course Name: Automobile Engineering

Course Code: TME- 802

Year of Study: IV

Semester: VIII

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-802.1	Illustrate the working of different Automobile systems like suspension, steering, lubrication and cooling systems and explain the design rules of gear box, over drives etc . Compare different technologies used by different manufactures.	Understand	B.L-2
TME-802.2	Apply the knowledge to develop various automobile parts and systems catering to the present era requirements	Apply	B.L-3
TME-802.3	Analyze performance issues in the automobile systems and balancing between design parameters involved in system design (i.e. power vs. speed).	Analyze	B.L-4
TME-802.4	Design moderately complex project involving setting up of automatic transmissions , gear ratios, speed variations and torque requirements.	Evaluate	B.L-5
TME-802.5	Describe the testing of brakes, clutches and other power transmission equipment.	Understand	B.L-2

B.L - Bloom's Taxonomy Levels

(1- Understand, 2 - Apply, 3 - Analyze, 4 - Evaluate, 5 - Create)

Year of Study: IV

Semester: VIII

Course Outcomes: The student will be able to:

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-020.1	Evaluate the principles of quality management and to explain how these principles can be applied within quality management systems.	Evaluate	B.L-5
TME-020.2	Identify the key aspects of the quality improvement cycle and to select and use appropriate tools and techniques for controlling, improving and measuring quality.	Understand	B.L-2
TME-020.3	To understand the different quality approach used in various industries.	Understand	B.L-2
TME-020.4	Critically analyze the strategic issues in quality management, including current issues and developments, and to devise and evaluate quality implementation plans.	Analyze	B.L-4
TME-020.5	Critically appraise the organizational, communication and teamwork requirements for effective quality management.	Apply	B.L-4

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 – Create)

	Course Outcomes	Bloom's Taxonomy	Bloom's Level (B.L)
TME-034.1	Understand the need for unconventional machining processes in comparison with conventional manufacturing processes.	Understand	B.L-1
TME-034.2	Apply the working principle and application of various unconventional machining processes.	Apply	B.L-2
TME-034.3	Examine the effect of process variables over the material removal rate and surface finish of various unconventional machining processes.	Analyze	B.L-3
TME-034.4	Employ the suitable unconventional machining process for a given material and machining condition, or application. Compare the merits, demerits and applications of unconventional machining process.	Evaluate	B.L-4
TME-034.5	Create mechanical parts for different applications. Students are also able to write CNC part programming. Students are able to create solid models that can be quickly modified using standard software tools.	Create	B.L-5

Understand the need for unconventional machining processes in comparison with conventional manufacturing processes

B.L – Bloom's Taxonomy Levels

(1- Understand, 2 – Apply, 3 – Analyze, 4 – Evaluate, 5 – Create)