

DEPARTMENT OF MECHANICAL ENGINEERING

Academic Year -2023-24

Course Outcomes

B.TECH.4th SEM

Applied Thermodynamics (BME401)

Course Outcome (CO)	Details of Course Outcomes
(CO1)	To learn about Air Standard Cycle.
(CO2)	To learn about of I law for reacting systems and heating value of fuels.
(CO3)	To learn about gas and vapor cycles
(CO4)	To learn about gas dynamics of air flow and steam through nozzles.
(CO5)	To analyze the performance of steam turbines.

Engineering Mechanics & Strength Material (BME402)

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Understand the force systems and application of force equilibrium to various two-dimensional problems.
(CO2)	Understand the concept of stress and strain under different loading conditions.
(CO3)	Determine the principal stresses and strains in structural members
(CO4)	Understand and determine the stresses, slope, and deflection of the transversely loaded members
(CO5)	Apply the concepts of stresses and strain in solving problems related to springs, buckling of columns and thin and thick cylinders.

Manufacturing Processes (BME403)

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Students will learn the various conventional manufacturing processes / casting and forming processes.
(CO2)	Students will understand the concepts of metal cutting and CNC machining.
(CO3)	Students will comprehend the knowledge of grinding and super finishing processes.
(CO4)	Students will understand the concepts of metal joining processes.
(CO5)	Students will learn the concepts of unconventional machining processes.

Applied Thermodynamics Lab (BME451)

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Demonstrate the working principles of thermodynamic systems and components through laboratory experiments.
(CO2)	Conduct performance tests on internal combustion engines, compressors, and other thermal systems.
(CO3)	Analyze experimental data to determine thermal efficiency, energy conversion rates, and system losses.
(CO4)	Apply thermodynamic laws to evaluate real-life engineering systems and processes.
(CO5)	Develop technical skills in using instruments and equipment relevant to thermal engineering.

Manufacturing Processes Lab (BME452)

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Demonstrate the working of various manufacturing machines and tools including lathe, milling, and drilling machines.
(CO2)	Perform basic machining operations such as turning, facing, drilling, and threading with precision and safety.
(CO3)	Understand and apply different manufacturing processes such as casting, welding, and forging in a practical setting.
(CO4)	Analyze the influence of process parameters on surface finish, material removal rate, and dimensional accuracy.
(CO5)	Interpret engineering drawings and plan manufacturing operations accordingly.

Computer Aided Machine Drawing-II Lab (BME453)

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Understand and apply 3D software to develop a part model
(CO2)	Understand conventional representation of machine components, and welded joints
(CO3)	Understand and apply the basis of fit or limit system
(CO4)	Understand about Plummer Block Bearing, Machine Vice, Screw Jack, Engine Stuffing box.
(CO5)	Create 3D part models and assemblies of various machine components

Python Programming (BCC402)

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Understand the basic syntax, semantics, and data types in Python.
(CO2)	Apply control flow mechanisms such as loops and conditional statements to develop logical programs.
(CO3)	Use Python's built-in data structures (lists, tuples, sets, and dictionaries) for effective data organization and manipulation.
(CO4)	Implement modular programming concepts using functions, modules, and packages.
(CO5)	Perform file operations and exception handling for robust and efficient programming.

Technical Communication (BAS401)

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Understand the principles, types, and processes of effective technical communication.
(CO2)	Develop professional documents such as technical reports, proposals, resumes, and emails with clarity and accuracy.
(CO3)	Demonstrate effective verbal and non-verbal communication skills through group discussions, presentations, and interviews.
(CO4)	Apply appropriate communication techniques in academic and professional environments using digital tools.
(CO5)	Analyze and adapt technical content for diverse audiences and purposes, maintaining coherence and professionalism.

Math IV (BAS403)

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Apply concepts of probability and statistics to analyze and interpret data in engineering contexts.
(CO2)	Use numerical methods such as interpolation, differentiation, and integration to solve mathematical problems computationally.
(CO3)	Solve linear and nonlinear equations using appropriate numerical techniques.
(CO4)	Understand and apply complex variable theory, including analytic functions, Cauchy’s theorem, and residue calculus.
(CO5)	Model and solve engineering problems using mathematical and statistical tools, demonstrating logical and analytical thinking.