DRONACHARYA
Group of Institutions

B-27, Knowledge Park – III, Greater Noida, Uttar Pradesh - 201308
Approved by: All India Council for Technical Education (AICTE), New Delhi
Affiliated to: Dr. A. P. J. Abdul Kalam Technical University (AKTU), Lucknow

DEPARTMENT OF MECHANICAL ENGINEERING
ACADEMIC YEAR 2023-24
SEMESTER III

THERMODYNAMICS (BME301)

Course Outcome (CO)	Details of Course Outcomes	Bloom's Knowledge Level (KL)
(CO1)	To understand the basic terms of thermodynamics	K2
(CO2)	To apply I law to various energy conversion devices	K3
(CO3)	To evaluate the changes in properties of substances in various processes	K3
(CO4)	To understand the difference between high grade and low-grade energies	K2

FLUID MECHANICS AND FLUID MACHINES (BME302)

Course Outcome (CO)	Details of Course Outcomes	Bloom's Knowledge Level (KL)
(CO1)	Understand the application of mass and momentum conservation laws for fluid flows.	K2
(CO2)	Understand the importance of dimensional analysis	K2
(CO3)	Evaluate the velocity and pressure variations in various types of simple flows.	K3
(CO4)	Mathematically analyze the flow in water pumps and turbines.	K3
(CO5)	Understand about the functioning of centrifugal and reciprocating pumps.	K2

MATERIALS ENGINEERING (BME303)

Course Outcome (CO)	Details of Course Outcomes	Bloom's Knowledge Level (KL)
(CO1)	Students will be able to identify the crystal structure and measure the mechanical properties of materials.	K3
(CO2)	Students will be able to test the various failures of materials.	K3
(CO3)	Students will be able to identify the mechanical properties based on composition of micro-constituents depicted in the phase-diagram.	K3
(CO4)	Students will understand the concept of improving the mechanical properti through heat treatment.	K2
(CO5)	Students will learn the structure and properties of alloys and composites.	K2

FLUID MECHANICS LAB (BME351)

Course Outcome (CO)	Details of Course Outcomes	Bloom's Knowledge Level (KL)
(CO1)	Understand the principles and performance characteristics of flow and thermal devices.	K2
(CO2)	Know about the measurement of the fluid properties	K1
(CO3)	Understand and analyze various properties of fluids	K3
(CO4)	Evaluate the performance characteristics of fluid/thermal machinery	K3
(CO5)	Evaluate the velocity and pressure variations in various types of simple flows.	K3

MATERIALS TESTING LAB (BME352)

Course Outcome (CO)	Details of Course Outcomes	Bloom's Knowledge Level (KL)
(CO1)	Students will be able to perform different destructive and non-destructive testing methods to measure various mechanical properties.	K2
(CO2)	Students will be able to analyse the effect of different heat-treatment processes on the Hardness.	K4
(CO3)	Students will be able to simulate the material using simulating software / measure the mechanical properties of 3-D printed components.	K3

PYTHON PROGRAMMING (BCC302)

Course Outcome (CO)	Details of Course Outcomes	Bloom's Knowledge Level (KL)
(CO1)	Interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements.	**K1,K2**
(CO2)	Express proficiency in the handling of strings and functions	**K_1, K_2**
(CO3)	Determine the methods to create and manipulate Python programs by utilizing the data structures like lists, dictionaries, tuples and sets.	**K_2**
(CO4)	Identify the commonly used operations involving file systems and regular expressions.	**K_1,K_2**
(CO5)	Articulate the Object-Oriented Programming concepts such as encapsulation, inheritance	**K_2**

COMPUTER AIDED MACHINE DRAWING-I LAB (BEE353)

Course Outcome (CO)	Details of Course Outcomes	Bloom's Knowledge Level (KL)
(CO1)	Understand and apply 2D software to develop a part model	K3
(CO2)	Understand about temporary and permanent fasteners	K2
(CO3)	Understand the need for free hand sketching, Free hand sketching of foundation bolts etc.	K2
(CO4)	Create assembly drawing of simple machine elements like rigid or flexible coupling	K3
(CO5)	Create 2D drawings and assemblies of various machine components	K3

Mini Project (BCC 351)

Course Outcome (CO)	Details of Course Outcomes	Bloom's Knowledge Level (KL)
(CO1)	Discover potential research areas in the field of IT	**K2**
(CO2)	Compare and contrast the several existing solutions for research challenge	**K5**
(CO3)	Demonstrate an ability to work in Teams and manage the conduct of the research study	**K4**
(CO4)	Formulate and propose a plan for creating a solution for the research plan identified.	**K5**
(CO5)	To report and present the findings of the study conducted in the preferred domain	**K5**

Universal Human Values and Professional Ethics (BVE301)

Course Outcome (CO)	Details of Course Outcomes	Bloom's Knowledge Level (KL)
(CO1)	Understand the significance of value inputs in a classroom, distinguish between values and skills, understand the need, basic guidelines, content and process of value education, explore the meaning of happiness and prosperity and do a correct appraisal of the current scenario in the society	**K1, K2**
(CO2)	Distinguish between the Self and the Body, understand the meaning of Harmony in the Self the Co-existence of Self and Body.	**K1, K2**
(CO3)	Understand the value of harmonious relationship based on trust, respect and other naturally acceptable feelings in human relationships and explore their role in ensuring a harmonious society.	**K2, K4**
(CO4)	Understand the harmony in nature and existence, and work out their mutually fulfilling participation in the nature.	**K2, K4**
(CO5)	Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious Environment wherever they work.	**K2, K3**

BASICS DATA STRUCTURES AND ALGORITHM (BOE306)

Course Outcome (CO)	Details of Course Outcomes	Bloom's Knowledge Level (KL)
(CO1)	Describe how arrays, linked lists, stacks, queues, trees, and graphs are represented in memory, used by the algorithms and their common applications.	**K1, K2**
(CO2)	Discuss the computational efficiency of the sorting and searching algorithms	**K2**
(CO3)	Implementation of Trees and Graphs and perform various operations on these data structure.	**K3**
(CO4)	Understanding the concept of recursion, application of recursion and its implementation and removal of recursion.	**K4**
(CO5)	Identify the alternative implementations of data structures with respect to its performance to solve a real world problem.	**K5, K6**