



# TAGORE

## INSTITUTE OF ENGINEERING AND TECHNOLOGY

DEVIYAKURICHI – 636 112, SALEM DISTRICT.

(Approved by AICTE, New Delhi and Affiliated to Anna University Chennai)

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Tel: +91- 4282 231 374, 231 474

### DEPARTMENT OF MECHANICAL ENGINEERING

Anna University Chennai –R2021

### Course Outcomes (COs)

**COURSE code:** MA3351

**Course Name:** TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS

Course Code	Course Outcomes
	<i>Upon completion of the course, the students will be able to:</i>
C201.1	Understand how to solve the given standard partial differential equations
C201.2	Solve differential equations using Fourier series analysis which plays a vital role in engineering applications.
C201.3	Appreciate the physical significance of Fourier series techniques in solving one and two dimensional heat flow problems and one dimensional wave equations.
C201.4	Understand the mathematical principles on transforms and partial differential equations would provide them the ability to formulate and solve some of the physical problems of engineering.
C201.5	Use the effective mathematical tools for the solutions of partial differential equations by using Z transform techniques for discrete time systems.

### CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
CO1	3	3	1	1	0	0	0	0	2	0	0	3	-	-	-
CO2	3	3	1	1	0	0	0	0	2	0	0	3	-	-	-
CO3	3	3	1	1	0	0	0	0	2	0	0	3	-	-	-
CO4	3	3	1	1	0	0	0	0	2	0	0	3	-	-	-
CO5	3	3	1	1	0	0	0	0	2	0	0	3	-	-	-
Avg	3	3	1	1	0	0	0	0	2	0	0	3	-	-	-



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Course Outcomes (COs)

COURSE code: ME3351

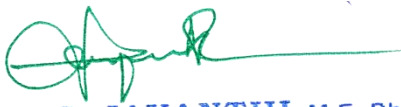
Course Name : ENGINEERING MECHANICS

Course Code	Course Outcomes
	<i>Upon completion of the course, the students will be able to:</i>
C202.1	Illustrate the vectorial and scalar representation of forces and moment
C202.2	Analyse the rigid body in equilibrium
C202.3	Evaluate the properties of distributed forces
C202.4	Determine the friction and the effects by the laws of friction
C202.5	Calculate dynamic forces exerted in rigid body

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C202.1	3	2	2	1	2	-	-	-	-	-	-	2	3	1	1
C202.2	3	2	2	1	2	-	-	-	-	-	-	2	3	1	1
C202.3	3	2	3	1	2	-	-	-	-	-	-	2	3	1	2
C202.4	3	2	3	1	2	-	-	-	-	-	-	2	3	1	2
C202.5	3	2	3	1	2	-	-	-	-	-	-	2	3	1	2
Avg	3	2	3	1	2	-	-	-	-	-	-	2	3	1	2



  
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Anna University Chennai – R2021

Course Outcomes (COs)

COURSE code: ME3391

COURSE Name: ENGINEERING THERMODYNAMICS

Course Code	Course Outcomes
	<i>Upon completion of the course, the students will be able to:</i>
C203.1	Apply the zeroth and first law of thermodynamics by formulating temperature scales and calculating the property changes in closed and open engineering systems.
C203.2	Apply the second law of thermodynamics in analyzing the performance of thermal devices through energy and entropy calculations.
C203.3	Apply the second law of thermodynamics in evaluating the various properties of steam through steam tables and Mollier chart
C203.4	Apply the properties of pure substance in computing the macroscopic properties of ideal and real gases using gas laws and appropriate thermodynamic relations.
C203.5	Apply the properties of gas mixtures in calculating the properties of gas mixtures and applying various thermodynamic relations to calculate property changes.

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C203.1	3	3	2	1	-	-	-	-	-	-		2			
C203.2	3	3	2	1	-	-	-	-	-	-		2			
C203.3	3	3	2	1	-	-	-	-	1	-	1	2	3		3
C203.4	3	3	2	1	-	1	-	-	2	-	1	2	3	2	
C203.5	3	3	2	1	-	1	-	-	2	-	1	2	3	2	3
AVG	3	3	2	2	-	1	-	-	2	-	1	2	3	3	3



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Anna University Chennai – R2021

Course Outcomes (COs)

COURSE CODE: CE3391


COURSE Name: FLUID MECHANICS AND MACHINERY

Course Code	Course Outcomes
	<i>Upon completion of the course, the students will be able to:</i>
C204.1	Understand the properties and behaviour in static conditions. Also, to understand the conservation laws applicable to fluids and its application through fluid kinematics and dynamics
C204.2	Estimate losses in pipelines for both laminar and turbulent conditions and analysis of pipes connected in series and parallel. Also, to understand the concept of boundary layer and its thickness on the flat solid surface.
C204.3	Formulate the relationship among the parameters involved in the given fluid phenomenon and to predict the performances of prototype by model studies
C204.4	Explain the working principles of various turbines and design the various types of turbines.
C204.5	Explain the working principles of centrifugal, reciprocating and rotary pumps and design the centrifugal and reciprocating pumps

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C204.1	3	3	2	2	1	2	2	1	2	1	1	2	3	2	3
C204.2	3	3	3	2	1	2	2	1	2	1	1	2	3	2	3
C204.3	3	3	3	3	1	2	2	1	2	1	1	2	3	3	3
C204.4	3	3	3	3	1	2	2	1	2	1	1	3	3	2	2
C204.5	3	3	3	3	1	2	2	1	2	1	1	3	3	2	2
C204	3	3	3	3	1	2	2	1	2	1	1	3	3	2	3



  
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Course Outcomes (COs)

**COURSE code:** ME3392


**COURSE Name:** ENGINEERING MATERIALS AND METALLURGY

Course Code	Course Outcomes
	<i>Upon completion of the course, the students will be able to:</i>
C205.1	Explain alloys and phase diagram, Iron-Iron carbon diagram and steel classification.
C205.2	Explain isothermal transformation, continuous cooling diagrams and different heat treatment processes
C205.3	Clarify the effect of alloying elements on ferrous and non-ferrous metals.
C205.4	Summarize the properties and applications of non-metallic materials.
C205.5	Explain the testing of mechanical properties.

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C205.1	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
C205.2	3	1	3	2	-	-	-	-	-	-	-	2	2	1	2
C205.3	3	1	3	1	-	2	-	1	-	-	-	2	2	1	2
C205.4	3	1	3	-	-	-	-	-	-	-	-	2	2	1	2
C205.5	3	1	3	-	-	-	2	-	-	-	-	2	2	1	2
C205	3	1	3	2	2							2	2	1	2



  
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Course Outcomes (COs)

COURSE code: ME3393


COURSE Name: MANUFACTURING PROCESSES

Course Code	Course Outcomes
	<i>Upon completion of the course, the students will be able to:</i>
C206.1	Explain the principle of different metal casting processes.
C206.2	Describe the various metal joining processes.
C206.3	Illustrate the different bulk deformation processes.
C206.4	Apply the various sheet metal forming process.
C206.5	Apply suitable molding technique for manufacturing of plastics components

### CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C206.1	3	-	2	-	-	2	3	1	1	-	-	1	3	1	2
C206.2	3	-	2	-	-	2	3	1	1	-	-	1	3	1	2
C206.3	3	-	2	-	-	2	2	1	1	-	-	1	3	1	2
C206.4	3	-	2	-	-	2	2	1	1	-	-	1	3	1	2
C206.5	3	-	2	-	2	2	2	1	1	-	-	1	3	1	2
C206	3	-	2	-	2	2	2	1	1	-	-	1	3	1	2



  
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Course Outcomes (COs)

COURSE code: ME3491

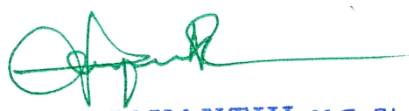
COURSE Name: THEORY OF MACHINES

Course Code	Course Outcomes
	<i>On completion of this laboratory course, the student should be able to</i>
C207.1	Discuss the basics of mechanism.
C207.2	Solve problems on gears and gear trains.
C207.3	Examine friction in machine elements.
C207.4	Calculate static and dynamic forces of mechanisms.
C207.5	Calculate the balancing masses and their locations of reciprocating and rotating masses. Computing the frequency of free vibration, forced vibration and damping coefficient.

### CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C207.1	3	2	2	-	2	-	-	1	-	-	-	1	3	-	1
C207.2	3	2	2	-	2	-	-	1	-	-	-	1	3	-	1
C207.3	3	2	2	-	2	-	-	1	-	-	-	1	3	-	1
C207.4	3	2	2	-	2	-	-	1	-	-	-	1	3	-	1
C207.5	3	2	2	-	2	-	-	1	-	-	-	1	3	-	1
C208	3	2	2	-	2	-	-	1	-	-	-	1	3	-	1



  
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Course Outcomes (COs)

COURSE code: ME3451

COURSE Name: THERMAL ENGINEERING

Course Code	Course Outcomes
	<i>On completion of this laboratory course, the student should be able to</i>
C208.1	Apply thermodynamic concepts to different air standard cycles and solve problems.
C208.2	To solve problems in steam nozzle and calculate critical pressure ratio.
C208.3	Explain the flow in steam turbines, draw velocity diagrams, flow in Gas turbines and solve problems.
C208.4	Explain the functioning and features of IC engine, components and auxiliaries.
C208.5	Calculate the various performance parameters of IC engines.

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C208.1	3	2	1	1	-	-	-	-	-	-	-	1	2	1	-
C208.2	3	2	2	1	-	-	-	-	-	-	-	1	2	1	-
C208.3	3	2	2	1	-	-	-	-	-	-	-	1	2	1	-
C208.4	3	2	1	1	-	-	-	-	-	-	-	1	2	1	-
C208.5	3	2	1	1	-	-	-	-	-	-	-	1	2	1	-
C207	3	2	1	1	-	-	-	-	-	-	-	1	2	1	-



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Course Outcomes (COs)

COURSE code: ME3492


COURSE Name: HYDRAULICS AND PNEUMATICS

Course Code	Course Outcomes
	<i>At the end of the course Learners will be able to</i>
C209.1	Apply the working principles of fluid power systems and hydraulic pumps.
C209.2	Apply the working principles of hydraulic actuators and control components.
C209.3	Design and develop hydraulic circuits and systems.
C209.4	Apply the working principles of pneumatic circuits and power system and its components.
C209.5	Identify various troubles shooting methods in fluid power systems.

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C209.1	2	1	1	1	-	-	-	-	-	-	-	1	2	1	1
C209.2	2	1	1	1	-	-	-	-	-	-	-	1	2	1	1
C209.3	2	1	1	1	-	-	-	-	-	-	-	1	2	1	1
C209.4	2	1	1	1	-	-	-	-	-	-	-	1	2	1	1
C209.5	2	1	1	1	-	-	-	-	-	-	-	1	2	1	1
C209	2	1	1	1	-	-	-	-	-	-	-	1	2	1	1



  
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Course Outcomes (COs)

COURSE code: ME3493


COURSE Name: MANUFACTURING TECHNOLOGY

Course Code	Course Outcomes
	<i>On Successful completion of the course, Students will be able to,</i>
C210.1	Describe the basics of open channel flow, its classification and analysis of uniform flow in steady state conditions with specific energy concept and its application
C210.2	Analyse steady gradually varied flow, water surface profiles and its length calculation using direct and standard step methods with change in water surface profiles due to change in grades.
C210.3	Derive the relationship among the sequent depths of steady rapidly varied flow and estimating energy loss in hydraulic jump with exposure to positive and negative surges.
C210.4	Design turbines and explain the working principle
C210.5	Differentiate pumps and explain the working principle with characteristic curves and design centrifugal and reciprocating pumps.

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C210.1	3	3	3	1	1	1	3	-	-	3	-	2	3	3	2
C210.2	3	3	3	1	1	1	3	-	-	3	-	2	3	2	2
C210.3	3	3	3	1	1	1	3	-	-	3	-	2	3	2	2
C210.4	3	3	2	1	1	1	3	-	-	3	-	2	3	2	2
C210.5	3	3	3	1	1	1	3	-	-	3	-	2	3	2	3
C210	3	3	3	1	1	1	3	-	-	3	-	2	3	2	2



  
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Course Outcomes (COs)

COURSE code: CE3491


COURSE Name: STRENGTH OF MATERIALS

Course	Course Outcomes
Code	<i>On Successful completion of the course, Students will be able to,</i>
C211.1	Understand the concepts of stress and strain in simple and compound bars, the importance of principal stresses and principal planes.
C211.2	Understand the load transferring mechanism in beams and stress distribution due to shearing force and bending moment.
C211.3	Apply basic equation of torsion in designing of shafts and helical springs
C211.4	Calculate slope and deflection in beams using different methods.
C211.5	Analyze thin and thick shells for applied pressures.

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C211.1	3	3	3	3	2	3	1	3	2	3	1	3	3	2	3
C211.2	3	3	3	3	2	3	1	3	2	3	1	3	3	2	3
C211.3	3	3	3	3	2	3	1	3	2	3	1	3	3	2	3
C211.4	3	3	3	3	2	3	1	3	2	3	1	3	3	2	3
C211.5	3	3	3	3	2	3	1	3	2	3	1	3	3	2	3
C211	3	3	3	3	2	3	1	3	2	3	1	3	3	2	3



  
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Course Outcomes (COs)

COURSE code: GE3451


COURSE Name: ENVIRONMENTAL SCIENCES AND SUSTAINABILITY

Course Code	Course Outcomes
	<i>On Successful completion of the course, Students will be able to,</i>
C212.1	To recognize and understand the functions of environment, ecosystems and biodiversity and their conservation.
C212.2	To identify the causes, effects of environmental pollution and natural disasters and contribute to the preventive measures in the society.
C212.3	To identify and apply the understanding of renewable and non-renewable resources and contribute to the sustainable measures to preserve them for future generations.
C212.4	To recognize the different goals of sustainable development and apply them for suitable technological advancement and societal development.
C212.5	To demonstrate the knowledge of sustainability practices and identify green materials, energy cycles and the role of sustainable urbanization.

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C212.1	2	1	-	-	-	2	3	-	-	-	-	2	-	-	-
C212.2	3	2	-	-	-	3	3	-	-	-	-	2	-	-	-
C212.3	3	-	1	-	-	2	2	-	-	-	-	2	-	-	-
C212.4	3	2	1	1	-	2	2	-	-	-	-	2	-	-	-
C212.5	3	2	1	-	-	2	2	-	-	-	-	1	-	-	-
C212	2.8	1.8	1	1	-	2.2	2.4	-	-	-	-	1.8	-	-	-



  
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Anna University Chennai – R2021

### Course Outcomes (COs)

COURSE code: ME3591

COURSE Name: DESIGN OF MACHINE ELEMENTS

Course Code	Course Outcomes
	<i>On Successful completion of the course, Students will be able to,</i>
C213.1	Explain the design machine members subjected to static and variable loads.
C213.2	Apply the concepts design to shafts, key and couplings.
C213.3	Apply the concepts of design to bolted, Knuckle, Cotter, riveted and welded joints.
C213.4	Apply the concept of design helical, leaf springs, flywheels, connecting rods and crank shafts.
C213.5	Apply the concepts of design and select sliding and rolling contact bearings, seals and gaskets.

### CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C213.1	2	2	3	-	-	-	-	1	1	-	-	2	3	2	2
C213.2	2	2	3	-	-	-	-	1	1	-	-	2	3	2	2
C213.3	2	2	3	-	-	-	-	1	1	-	-	2	3	2	2
C213.4	2	2	3	-	-	-	-	1	1	-	-	2	3	2	2
C213.5	2	2	3	-	-	-	-	1	1	-	-	2	3	2	2
C213	2	2	3	-	-	-	-	1	1	-	-	2	3	2	2



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Course Outcomes (COs)

COURSE code: ME3592


COURSE Name: METROLOGY AND MEASUREMENTS

Course Code	Course Outcomes
	<i>On Successful completion of the course, Students will be able to,</i>
C214.1	Discuss the concepts of measurements to apply in various metrological instruments.
C214.2	Apply the principle and applications of linear and angular measuring instruments, assembly and transmission elements.
C214.3	Apply the tolerance symbols and tolerance analysis for industrial applications.
C214.4	Apply the principles and methods of form and surface metrology.
C214.5	Apply the advances in measurements for quality control in manufacturing Industries.

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C214.1	3	2	2	2	-	-	-	-	1	-	-	1	3	2	1
C214.2	3	2	2	2	-	-	-	-	1	-	-	1	3	2	1
C214.3	3	2	2	2	-	-	-	-	1	-	-	1	3	2	1
C214.4	3	2	2	2	-	-	-	-	1	-	-	1	3	2	1
C214.5	3	2	2	2	-	-	-	-	1	-	-	1	3	2	1
C214	3	2	2	2	-	-	-	-		-	-	1	3	2	1



  
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Course Outcomes (COs)

COURSE code: CME380


COURSE Name: AUTOMOBILE ENGINEERING

Course Code	Course Outcomes
	<i>On Successful completion of the course, Students will be able to,</i>
C215.1	Apply the concepts of construction and working principle of various parts of an automobile in Manufacturing.
C215.2	To Discuss the practice for assembling and dismantling of engine parts and transmission system
C215.3	Apply the principles of various transmission systems in automobile.
C215.4	Apply the knowledge of steering, brakes and suspension systems
C215.5	Apply and select the alternative energy sources

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C215.1	2	1	2	1	-	-	-	-	1	-	-	1	1	2	1
C215.2	2	1	2	1	-	-	-	-	1	-	-	1	1	2	1
C215.3	2	1	2	1	-	-	-	-	1	-	-	1	1	2	1
C215.4	2	1	2	1	-	-	-	-	1	-	-	1	1	2	1
C215.5	2	1	2	1	-	-	-	-	1	-	-	1	1	2	1
C215	2	1	1	-	-	-	-	-	-	-	-	1	1	2	1



  
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Course Outcomes (COs)

COURSE code: CME387

COURSE Name: NON-TRADITIONAL MACHINING PROCESSES

Course	Course Outcomes
Code	<i>On Successful completion of the course, Students will be able to,</i>
C216.1	Formulate different types of non-traditional machining processes and evaluate mechanical energy based non-traditional machining processes.
C216.2	Illustrate chemical and electro chemical energy based processes.
C216.3	Evaluate thermo-electric energy based processes.
C216.4	Interpret Nano finishing processes.
C216.5	Analyze hybrid non-traditional machining processes and differentiate non- traditional machining processes.

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C216.1	3	-	1	-	1	-	1	-	1	1	-	1	2	2	2
C216.2	3	-	1	-	1	-	1	-	1	1	-	1	2	2	2
C216.3	3	-	1	-	1	-	1	-	1	1	-	1	2	2	2
C216.4	3	-	2	-	1	-	1	-	1	1	-	1	2	2	2
C216.5	3	-	3	-	3	-	1	-	1	1	-	1	3	3	3
C216	3	-	3	-	3	-	1	-	1	1	-	1	3	3	3



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### Course Outcomes (COs)

COURSE code: CME396


COURSE Name: PROCESS PLANNING AND COST ESTIMATION

Course Code	Course Outcomes
	<i>On Successful completion of the course, Students will be able to,</i>
C217.1	Discuss select the process, equipment and tools for various industrial products.
C217.2	Explain the prepare process planning activity chart.
C217.3	Explain the concept of cost estimation
C217.4	Compute the job order cost for different type of shop floor.
C217.5	Calculate the machining time for various machining operations.

### CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C217.1	3	2	2	2	-	-	-	-	1	-	1	1	2	1	1
C217.2	3	3	2	1	-	-	-	-	1	-	1	1	2	1	1
C217.3	3	3	2	2	-	-	-	-	1	-	1	1	2	1	1
C217.4	3	3	2	2	-	-	-	-	1	-	1	1	2	1	1
C217.5	3	3	2	2	-	-	-	-	1	-	1	1	2	1	1
C217	3	3	2	3	-	-	-	-	3	-	1	1	2	1	1



  
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Course Outcomes (COs)

COURSE code: MX3084

COURSE Name: DISASTER RISK REDUCTION AND MANAGEMENT

Course Code	Course Outcomes
	<i>On Successful completion of the course, Students will be able to,</i>
C301.1	To impart knowledge on the concepts of Disaster, Vulnerability and Disaster Risk reduction
C301.2	To enhance understanding on Hazards, Vulnerability and Disaster Risk Assessment prevention and risk reduction
C301.3	To develop disaster response skills by adopting relevant tools and technology
C301.4	To develop disaster response skills by adopting relevant tools and technology
C301.5	Enhance awareness of institutional processes for Disaster response in the country and

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C301.1	3	3	2	3	-	-	2	2	-	-	2	-	2	-	1
C301.2	3	3	3	3	-	-	2	1	-	-	2	-	2	-	1
C301.3	3	3	3	3	-	-	2	2	-	-	-	-	2	-	1
C301.4	3	3	2	3	-	-	2	1	-	-	2	-	2	-	1
C301.5	3	3	2	3	-	-	2	2	-	-	2	-	3	-	1
C301	3	3	3	3	-	-	2	2	-	-	2	-	2	-	1



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Course Outcomes (COs)

COURSE code: ME3691

COURSE Name: HEAT AND MASS TRANSFER

Course Code	Course Outcomes
	<i>On Successful completion of the course, Students will be able to,</i>
C302.1	Apply heat conduction equations to different surface configurations under steady state and transient conditions and solve problems.
C302.2	Apply free and forced convective heat transfer correlations to internal and external flows through/over various surface configurations and solve problems.
C302.3	Explain the phenomena of boiling and condensation, apply LMTD and NTU methods of thermal analysis to different types of heat exchanger configurations and solve problems.
C302.4	Explain basic laws for Radiation and apply these principles to radiative heat transfer between different types of surfaces to solve problems.
C302.5	Apply diffusive and convective mass transfer equations and correlations to solve problems for different applications.

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C302.1	3	3	3	2	-	-	-	-	1	-	-	1	3	2	1
C302.2	3	3	3	3	-	-	-	-	1	-	-	1	3	2	1
C302.3	3	3	3	2	-	-	-	-	1	-	-	1	3	2	1
C302.4	3	3	3	2	-	-	-	-	1	-	-	1	3	2	1
C302.5	3	3	3	2	-	-	-	-	1	-	-	1	3	2	1
C302	3	3	3	2	-	-	-	-	1	-	-	1	3	2	1



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Course Outcomes (COs)

COURSE code: CME344

COURSE Name: PRODUCT LIFE CYCLE MANAGEMENT

Course Code	Course Outcomes
	<i>On Successful completion of the course, Students will be able to,</i>
C303.1	Summarize the history, concepts and terminology of PLM
C303.2	Develop the functions and features of PLM/PDM
C303.3	Discuss different modules offered in commercial PLM/PDM tools.
C303.4	Interpret the implement PLM/PDM approaches for industrial applications.
C303.5	Integrate PLM/PDM with legacy data bases, CAx& ERP systems

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C303.1	1	1	3	1	-	-	-	1	1	-	-	1	1	3	3
C303.2	1	1	3	1	-	-	-	1	1	-	-	1	1	3	3
C303.3	1	1	3	1	-	-	-	1	1	-	-	1	1	3	3
C303.4	1	1	3	1	-	-	-	1	1	-	-	1	1	3	3
C303.5	1	1	3	1	-	-	-	1	1	-	-	1	1	3	3
C303	1	1	3	1	-	-	-	1	1	-	-	1	1	3	3



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Course Outcomes (COs)

COURSE code: CME364


COURSE Name: ENERGY STORAGE DEVICES

Course Code	Course Outcomes
	<i>On Successful completion of the course, Students will be able to,</i>
C304.1	Discuss the need and identify the suitable energy storage devices for applications.
C304.2	Explain the working of various energy storage devices and their importance.
C304.3	Explain the basic characteristics of batteries for mobile and hybrid systems.
C304.4	Discuss the storage of renewable energies and management systems.
C304.5	Explain the need for other energy devices and their scope for applications.

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C304.1	3	2	1	1	1	-	2	-	-	-	-	-	1	2	3
C304.2	3	2	1	1	1	-	2	-	-	-	-	-	1	2	3
C304.3	3	2	1	1	1	-	2	-	-	-	-	-	1	2	3
C304.4	3	2	1	1	1	-	2	-	-	-	-	-	1	2	3
C304.5	3	2	1	1	1	-	2	-	-	-	-	-	1	2	3
C304	3	2	1	1	1	-	2	-	-	-	-	-	1	2	3



  
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Course Outcomes (COs)

COURSE code: CME384

COURSE Name: POWER PLANT ENGINEERING

Course Code	Course Outcomes
	<i>On Successful completion of the course, Students will be able to,</i>
C306.1	Explain the layout, construction and working of the components inside a thermal power plant.
C306.2	Explain the layout, construction and working of the components inside a Diesel, Gas and Combined cycle power plants.
C306.3	Explain the layout, construction and working of the components inside nuclear power plants.
C306.4	Explain the layout, construction and working of the components inside Renewable energy power plants
C306.5	Explain the applications of power plants while extend their knowledge to power plant economics and environmental hazards and estimate the costs of energy production.

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C306.1	3	1	1	1	-	1	3	-	-	1	-	1	2	2	1
C306.2	3	1	1	1	-	1	3	-	-	1	-	1	2	2	1
C306.3	3	1	1	1	-	1	3	-	-	1	-	1	2	2	1
C306.4	3	1	1	1	-	1	3	-	-	1	-	1	2	2	1
C306.5	3	1	1	1	-	1	3	-	-	1	-	1	2	2	1
C306	3	1	1	1	-	1	3	-	-	1	-	1	2	2	1



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Course Outcomes (COs)

COURSE code: CME388


COURSE Name: INDUSTRIAL SAFETY

Course Code	Course Outcomes
	<i>On Successful completion of the course, Students will be able to,</i>
C306.1	Explain the fundamental concept and principles of industrial safety
C306.2	Apply the principles of maintenance engineering.
C306.3	Analyze the wear and its reduction.
C306.4	Evaluate faults in various tools, equipments and machines
C306.5	Apply periodic maintenance procedures in preventive maintenance.

CO – PO Map

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS01	PS02	PS03
C306.1	2	1	2	-	-	2	1	-	-	-	-	1	1	2	1
C306.2	2	1	2	-	-	2	1	-	-	-	-	1	1	2	1
C306.3	2	1	2	-	-	2	1	-	-	-	-	1	1	2	1
C306.4	2	1	2	-	-	2	1	-	-	-	-	1	1	2	1
C306.5	2	1	2	-	-	2	1	-	-	-	-	1	1	2	1
C306	2	1	2	-	-	2	1	-	-	-	-	1	1	2	1



  
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