ANNA UNIVERSITY, CHENNAI

AFFILIATED INSTITUTIONS

B.E. MECHANICAL ENGINEERING

REGULATIONS – 2017

CHOICE BASED CREDIT SYSTEM

PROGRAMME EDUCATIONAL OBJECTIVES:

Bachelor of Mechanical Engineering curriculum is designed to impart Knowledge, Skill and Attitude on the graduates to

1. Have a successful career in Mechanical Engineering and allied industries.
2. Have expertise in the areas of Design, Thermal, Materials and Manufacturing.
3. Contribute towards technological development through academic research and industrial practices.
4. Practice their profession with good communication, leadership, ethics and social responsibility.
5. Graduates will adapt to evolving technologies through life-long learning.

PROGRAMME OUTCOMES

1. An ability to apply knowledge of mathematics and engineering sciences to develop mathematical models for industrial problems.
2. An ability to identify, formulates, and solve complex engineering problems. with high degree of competence.
3. An ability to design and conduct experiments, as well as to analyze and interpret data obtained through those experiments.
4. An ability to design mechanical systems, component, or a process to meet desired needs within the realistic constraints such as environmental, social, political and economic sustainability.
5. An ability to use modern tools, software and equipment to analyze multidisciplinary problems.
6. An ability to demonstrate on professional and ethical responsibilities.
7. An ability to communicate, write reports and express research findings in a scientific community.
8. An ability to adapt quickly to the global changes and contemporary practices.
9. An ability to engage in life-long learning.

PEO / PO Mapping

Programme Educational Objectives	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
I	✓	✓	✓	✓	✓	✓	✓	✓	✓
II	✓	✓	✓		✓			✓	
III		✓		✓	✓	✓		✓	
IV					✓	✓	✓		✓
V		✓	✓	✓	✓				✓

		COURSE TITLE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
YEAR 1	SEMESTER 1	Communicative English							✓		
		Engineering Mathematics I	✓	✓	✓						✓
		Engineering Physics	✓	✓	✓						✓
		Engineering Chemistry				✓					
		Problem Solving and Python Programming					✓				
		Engineering Graphics		✓	✓				✓		
		Problem Solving and Python Programming Laboratory			✓		✓				
		Physics and Chemistry Laboratory			✓						
	SEMESTER 2	Technical English							✓		
		Engineering Mathematics II	✓	✓	✓				✓		✓
		Materials Science				✓				✓	
		Basic Electrical, Electronics and Instrumentation Engineering				✓				✓	
		Environmental Science and Engineering				✓					
		Engineering Mechanics	✓	✓					✓	✓	✓
		Engineering Practices Laboratory			✓						
		Basic Electrical, Electronics and Instrumentation Engineering			✓						
		COURSE TITLE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
	SEM 3	Transforms and Partial Differential Equations	✓	✓	✓					✓	✓
		Engineering Thermodynamics	✓	✓	✓				✓	✓	
		Fluid Mechanics and Machinery	✓	✓	✓						
		Manufacturing Technology - I			✓	✓	✓	✓		✓	✓
		Electrical Drives and Controls									
		Manufacturing Technology Laboratory - I			✓	✓	✓	✓		✓	✓
		Computer Aided Machine Drawing			✓	✓	✓	✓		✓	✓
EAR 2		Electrical Engineering Laboratory			✓						
		Interpersonal Skills / Listening & Speaking			✓						
	SEM 4	Statistics and Numerical Methods	✓	✓							
		Kinematics of Machinery	✓	✓	✓		✓				
		Manufacturing Technology– II	✓		✓	✓	✓			✓	✓
		Engineering Metallurgy							✓		
		Strength of Materials for Mechanical Engineers	✓	✓	✓	✓					
		Thermal Engineering- I	✓	✓			✓				

		Manufacturing Technology Laboratory–II			✓						
		Strength of Materials and Fluid Mechanics Machinery Laboratory			✓						
		Advanced Reading and Writing						✓			✓
		COURSE TITLE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
	SEM 6	Thermal Engineering- II	✓	✓			✓			✓	
		Design of Machine Elements		✓		✓			✓	✓	✓
		Metrology and Measurements	✓		✓	✓			✓	✓	
		Dynamics of Machines	✓	✓	✓		✓		✓		✓
		Kinematics and Dynamics Laboratory	✓	✓	✓	✓					
		Thermal Engineering Laboratory	✓	✓	✓						
		Metrology and Measurements Laboratory	✓	✓	✓	✓			✓		
		Design of Transmission Systems		✓		✓			✓		✓
		Computer Aided Design and Manufacturing		✓	✓		✓				
		Heat and Mass Transfer	✓	✓	✓	✓				✓	✓
		Finite Element Analysis	✓	✓		✓					✓
		Hydraulics and Pneumatics	✓	✓		✓				✓	
		C.A.D. / C.A.M. Laboratory		✓	✓			✓			
		Design and Fabrication Project						✓	✓		✓
		Professional Communication				✓	✓	✓	✓		✓
		COURSE TITLE	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
YEAR 4	**SEM 7**	Power Plant Engineering	✓	✓	✓	✓				✓	
		Mechatronics	✓	✓	✓		✓			✓	✓
		Process Planning and Cost Estimation		✓		✓					
		Simulation and Analysis Laboratory	✓				✓		✓		
		Mechatronics Laboratory	✓	✓	✓		✓			✓	✓
		Technical Seminar						✓			
	SEM 8	Project Work	✓	✓	✓			✓	✓		
		Principles of Management						✓			✓

PO-CO MATRIX (REGULATION 2017)

SEMESTER I

HS8151 COMMUNICATIVE ENGLISH

HS8151.1 Read articles of a general kind in magazines and newspapers.

HS8151.2 Participate effectively in informal conversations; introduce themselves and their friends and express opinions in English.

HS8151.3 Comprehend conversations and short talks delivered in English

HS8151.4 Write short essays of a general kind and personal letters and emails in English.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
HS8151.1	-	-	L	-	-	L	H	L	-
HS8151.2	L	-	-	L	-	L	H	-	-
HS8151.3	L	-	-	-	L	L	H	-	L
HS8151.4	L	-	-	-	-	L	H	L	-

MA8151 ENGINEERING MATHEMATICS – I

MA8151.1 Use both the limit definition and rules of differentiation to differentiate functions.

MA8151.2 Apply differentiation to solve maxima and minima problems.

MA8151.3 Evaluate integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus.

MA8151.4 Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to change of order and change of variables.

MA8151.5 Evaluate integrals using techniques of integration, such as substitution, partial fractions and integration by parts.

MA8151.6 Determine convergence/divergence of improper integrals and evaluate convergent improper integrals.

MA8151.7 Apply various techniques in solving differential equations.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
MA8151.1	H	H	H	-	-	-	-	L	H
MA8151.2	H	M	H	-	L	-	-	-	M
MA8151.3	M	H	H	-	-	-	L	-	H
MA8151.4	H	M	H	-	-	L	-	-	H
MA8151.5	H	H	M	L	-	-	-	-	M
MA8151.6	H	H	M	-	-	L	-	-	H
MA8151.7	H	M	H	-	L	-	-	-	H

PH8151 ENGINEERING PHYSICS

PH8151.1 The students will gain knowledge on the basics of properties of matter and its Applications.

PH8151.2 The students will acquire knowledge on the concepts of waves and optical devices and their applications in fibre optics,

PH8151.3 The students will have adequate knowledge on the concepts of thermal properties of materials and their applications in expansion joints and heat exchangers,

PH8151.4 The students will get knowledge on advanced physics concepts of quantum theory and its applications in tunneling microscopes, and

PH8151.5 The students will understand the basics of crystals, their structures and different crystal growth techniques.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
PH8151.1	H	H	H	-	L	-	-	-	H
PH8151.2	H	H	H	-	L	-	-	-	H
PH8151.3	H	H	H	-	-	-	L	-	M
PH8151.4	H	H	H	L	-	L	-	-	H
PH8151.5	H	H	H	L	-	-	-	L	H

CY8151 ENGINEERING CHEMISTRY

CY8151.1 The knowledge gained on Water Treatment techniques to facilitate better understanding of Ion exchange process, Zeolite process, Desalination and Reverse Osmosis.

CY8151.2 The knowledge gained on Surface Chemistry to facilitate better understanding on Adsorption of gases and Catalysis.

CY8151.3 The knowledge gained on Engineering Materials to facilitate better understanding on Alloys and Heat treatment process.

CY8151.4 The knowledge gained on Fuels to facilitate better understanding on its types and Combustion process.

CY8151.5 The knowledge gained on Energy Sources and Storage devices to facilitate better understanding of its processes and applications.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CY8151 .1	-	L	L	H	-	-	-	L	-
CY8151 .2	L	L	-	H	L	-	-	L	L
CY8151 .3	L	L	-	M	L	-	-	-	L
CY8151 .4	-	L	-	H	L	L	-	-	L
CY8151 .5	L	L	L	H	-	-	-	L	L

GE8151 PROBLEM SOLVING AND PYTHON PROGRAMMING

GE8151.1 Develop algorithmic solutions to simple computational problems.
GE8151.2 Read, write, execute by hand simple Python programs.
GE8151.3 Structure simple Python programs for solving problems.
GE8151.4 Decompose a Python program into functions.
GE8151.5 Represent compound data using Python lists, tuples, dictionaries.
GE8151.6 Read and write data from/to files in Python Programs.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
GE8151 .1	M	-	L	-	H	-	L	M	M
GE8151 .2	L	L	M	-	H	-	-	-	M
GE8151 .3	M	M	-	-	H	-	L	-	M
GE8151 .4	M	L	M	-	H	-	-	-	L
GE8151 .5	-	-	L	-	H	-	-	M	M
GE8151 .6	M	L	M	-	H	-	-	-	L

GE8152 ENGINEERING GRAPHICS

GE8152.1 Familiarize with the fundamentals and standards of Engineering graphics.
GE8152.2 Perform freehand sketching of basic geometrical constructions and multiple views of objects.
GE8152.3 Project orthographic projections of lines and plane surfaces.
GE8152.4 Draw projections and solids and development of surfaces.
GE8152.5 Visualize and to project isometric and perspective sections of simple solids.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
GE8152 .1	L	H	H	-	L	-	H	L	-
GE8152 .2	-	H	H	-	L	-	H	L	-
GE8152 .3	L	H	H	-	L	-	H	-	L
GE8152 .4	L	H	H	-	L	-	H	-	-
GE8152 .5	L	H	H	-	-	-	H	-	-

GE8161 PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY

GE8161.1 Write, test, and debug simple Python programs.
GE8161.2 Implement Python programs with conditionals and loops.
GE8161.3 Develop Python programs step-wise by defining functions and calling them.
GE8161.4 Use Python lists, tuples, dictionaries for representing compound data.
GE8161.5 Read and write data from/to files in Python.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
GE8161 .1	L	-	H	-	H	-	L	L	L
GE8161 .2	L	-	H	-	H	-	-	-	-
GE8161 .3	-	L	H	-	H	-	L	-	-
GE8161 .4	-	L	H	-	H	-	-	-	L
GE8161 .5	-	-	H	-	H	-	-	L	L

BS8161 PHYSICS AND CHEMISTRY LABORATORY

BS8161.1 Apply the principles of elasticity.
BS8161.2 The knowledge on optics.
BS8161.3 Understood the thermal properties for engineering applications.
BS8161.4 Understood the basic principles of laser.
BS8161.5 Determine the Thermal conductivity of a bad conductor.
BS8161.6 Estimate the Iron content and molecular weight.
BS8161.7 Knowledge on the quantitative chemical analysis of water quality.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
BS8161 .1	-	L	H	-	-	-	-	L	-
BS8161 .2	-	L	H	-	M	-	-	L	L
BS8161 .3	L	-	H	-	L	-	-	-	-
BS8161 .4	-	-	H	-	L	L	-	-	-
BS8161 .5	L	M	H	-	-	-	-	L	-
BS8161 .6	-	-	H	-	L	L	-	-	-
BS8161 .7	L	M	H	-	-	-	-	L	-

SEMESTER II

HS8251 TECHNICAL ENGLISH

HS8251.1 Read technical texts and write area- specific texts effortlessly.
HS8251.2 Listen and comprehend lectures and talks in their area of specialisation successfully.
HS8251.3 Speak appropriately and effectively in varied formal and informal contexts.
HS8251.4 Write reports and winning job applications.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
HS8251.1	-	-	M	L	M	L	H	-	-
HS8251.2	-	M	-	M	-	-	H	L	-
HS8251.3	-	M	M	L	-	M	H	L	-
HS8251.4	-	L	M	L	L	-	H	-	-

MA8251 ENGINEERING MATHEMATICS – II

MA8251.1 Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.

MA8251.2 Gradient, divergence and curl of a vector point function and related identities.

MA8251.3 Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.

MA8251.4 Analytic functions, conformal mapping and complex integration.

MA8251.5 Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
MA8251.1	H	H	H	-	M	-	H	-	H
MA8251.2	H	H	H	-	M	-	H	-	H
MA8251.3	H	H	H	-	L	-	H	-	H
MA8251.4	H	H	H	-	M	-	H	-	H
MA8251.5	H	H	H	-	M	-	H	-	H

PH8251 MATERIALS SCIENCE

PH8251.1 The students will have knowledge on the various phase diagrams and their applications.

PH8251.2 The students will acquire knowledge on Fe-Fe3C phase diagram, various microstructures and alloys.

PH8251.3 The students will get knowledge on mechanical properties of materials and their measurement.

PH8251.4 The students will gain knowledge on magnetic, dielectric and superconducting properties of materials.

PH8251.5 The students will understand the basics of ceramics, composites and nanomaterials.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
PH8251.1	L	L	L	H	L	-	-	H	L
PH8251.2	L	-	-	H	-	-	-	H	-
PH8251.3	L	-	-	H	-	-	-	H	-
PH8251.4	M	-	-	H	-	-	-	H	-
PH8251.5	M	-	-	H	-	-	-	H	-

BE8253 BASIC ELECTRICAL, ELECTRONICS AND INSTRUMENTATION ENGINEERING

BE8253.1 Understand the concepts of Electrical circuits.
BE8253.2 Understand the concepts of AC circuits.
BE8253.3 Understand electric circuits and working principles of electrical machines.
BE8253.4 Understand the concepts of various electronic devices.
BE8253.5 Choose appropriate instruments for electrical measurement for a specific application.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
BE8253.1	L	-	-	H	-	-	-	H	-
BE8253.2	-	L	-	H	-	-	-	H	-
BE8253.3	L	L	L	H	M	-	-	H	-
BE8253.4	-	-	L	H	-	-	-	H	-
BE8253.5	-	L	-	H	L	-	-	H	L

GE8291 ENVIRONMENTAL SCIENCE AND ENGINEERING

GE8291.1 Public awareness of environment at an infant stage.
GE8291.2 Knowledge about the nature and facts about environment.
GE8291.3 Understand the importance of environment by assessing its impact on the human world.
GE8291.4 Understand the interrelationship between living organism and environment.
GE8291.5 Understand the features of the earth‟s interior and surface.
GE8291.6 The Knowledge on natural resources, pollution control and waste management.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
GE8291.1	L	L	L	H	L	M	M	L	M
GE8291.2	L	L	M	H	L	L	L	L	L
GE8291.3	L	-	L	H	L	L	M	M	L
GE8291.4	L	-	L	H	-	L	L	L	M
GE8291.5	L	L	L	H	-	-	M	L	L
GE8291.6	M	M	L	H	M	L	L	L	M

GE8292 ENGINEERING MECHANICS

GE8292.1 Illustrate the vectorial and scalar representation of forces and moments.
GE8292.2 Analyse the rigid body in equilibrium.
GE8292.3 Evaluate the properties of surfaces and solids.
GE8292.4 Calculate dynamic forces exerted in rigid body.
GE8292.5 Determine the friction and the effects by the laws of friction.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
GE8292.1	H	H	-	-	M	-	M	M	M
GE8292.2	H	H	-	-	M	-	M	H	H
GE8292.3	H	H	-	-	L	-	H	M	H
GE8292.4	H	H	-	-	L	-	H	H	H
GE8292.5	H	H	-	-	L	-	H	H	H

GE8261 ENGINEERING PRACTICES LABORATORY

GE8261.1 Fabricate carpentry components and pipe connections including plumbing works.
GE8261.2 Use welding equipments to join the structures.
GE8261.3 Carry out the basic machining operations.
GE8261.4 Make the models using sheet metal works.
GE8261.5 Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundry and fittings.
GE8261.6 Carry out basic home electrical works and appliances.
GE8261.7 Measure the electrical quantities.
GE8261.8 Elaborate on the components, gates, soldering practices.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
GE8261.1	M		H	-	L	-	-	L	L
GE8261.2	L	-	H	-	-	-	-	-	M
GE8261.3	M	M	H	-	-	-	-	M	-
GE8261.4	-	-	H	-	-	-	-	-	-
GE8261.5	-	L	M	-	-	-	-	-	-
GE8261.6	-	-	H	-	M	-	L	-	-
GE8261.7	-	-	H	-	-	-	-	L	-
GE8261.8	-	-	H	-	-	-	M	L	-

BE8261 BASIC ELECTRICAL, ELECTRONICS AND INSTRUMENTATION ENGINEERING LABORATORY

BE8261.1 Ability to determine the speed characteristic of different electrical machines.

BE8261.2 Ability to design simple circuits involving diodes.

BE8261.3 Ability to design transistors.

BE8261.4 Ability to use operational amplifiers.

BE8261.5 Ability to use operational sensors.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
BE8261.1	L	L	H	-	L	-	L	L	L
BE8261.2	L	L	H	-	L	L	L	L	L
BE8261.3	L	L	H	-	L	M	L	L	L
BE8261.4	M	L	H	-	L	L	L	L	L
BE8261.5	L	L	H	-	L	-	L	L	L

SEMESTER III

MA8353 TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS

MA8353.1 Understand how to solve the given standard partial differential equations.

MA8353.2 Solve differential equations using Fourier series analysis which plays a vital role in engineering applications.

MA8353.3 Appreciate the physical significance of Fourier series techniques in solving one and two dimensional heat flow problems and one dimensional wave equations.

MA8353.4 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.

MA8353.5 Use the effective mathematical tools for the solutions of partial differential equations by using Z transform techniques for discrete time systems.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
MA8353.1	H	H	H	M	M	L	-	H	H
MA8353.2	M	H	M	L	L	-	-	H	H
MA8353.3	H	M	H	-	L	M	L	H	M
MA8353.4	H	H	H	L	L	-	-	H	M
MA8353.5	H	H	H	L	-	L		H	H

ME8391 ENGINEERING THERMODYNAMICS

ME8391.1 Apply the first law of thermodynamics for simple open and closed systems under steady and unsteady conditions.

ME8391.2 Apply second law of thermodynamics to open and closed systems and calculate entropy and availability.

ME8391.3 Apply Rankine cycle to steam power plant and compare few cycle improvement methods.

ME8391.4 Derive simple thermodynamic relations of ideal and real gases.

ME8391.5 Calculate the properties of gas mixtures and moist air and its use in psychometric processes.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8391.1	H	H	H	L	M	L	H	H	L
ME8391.2	H	H	H	L	M	L	H	H	L
ME8391.3	H	H	H	L	M	L	H	H	L
ME8391.4	H	H	H	L	M	L	H	H	L
ME8391.5	H	H	H	L	M	L	H	H	L

CE8394 FLUID MECHANICS AND MACHINERY

CE8394.1 Apply mathematical knowledge to predict the properties and characteristics of a fluid.

CE8394.2 Can analyse and calculate major and minor losses associated with pipe flow in piping networks.

CE8394.3 Can mathematically predict the nature of physical quantities.

CE8394.4 Can critically analyse the performance of pumps.

CE8394.5 Can critically analyse the performance of turbines.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CE8394.1	H	H	H	-	L	-	-	-	-
CE8394.2	H	H	H	L	L	L	-	-	-
CE8394.3	H	M	H	M	M	-	-	-	-
CE8394.4	H	H	H	-	M	-	-	-	-
CE8394.5	H	H	H	-	M	-	-	-	-

ME8351 MANUFACTURING TECHNOLOGY – I

ME8351.1 Explain different metal casting processes, associated defects, merits and demerits.

ME8351.2 Compare different metal joining processes.

ME8351.3 Summarize various hot working and cold working methods of metals.

ME8351.4 Explain various sheet metal making processes.

ME8351.5 Distinguish various methods of manufacturing plastic components.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8351.1	-	-	H	H	H	H	-	H	H
ME8351.2	-	-	H	H	H	H	L	M	H
ME8351.3	-	L	H	M	H	M	-	H	H
ME8351.4	L	-	H	H	H	H	L	M	M
ME8351.5	-	-	H	H	H	H	-	H	H

EE8353 ELECTRICAL DRIVES AND CONTROLS

EE8353.1 Understand the basic concepts of different types of electrical machines and their performance.

EE8353.2 Knowledge about D.C motors and induction motors.

EE8353.3 Knowledge about the conventional and solid-state drives.

EE8353.4 Understanding the conventional and solid state speed control of D.C drives.

EE8353.5 Understanding the conventional and solid state speed control of A.C drives.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
EE8353.1	L	L	-	L	L	-	-	L	-
EE8353.2	L	L	-	L	L	-	-	L	L
EE8353.3	L	L	-	L	L	-	-	L	-
EE8353.4	L	L	-	L	L	-	-	L	L
EE8353.5	L	L	-	L	L	-	-	L	L

ME8361 MANUFACTURING TECHNOLOGY LABORATORY – I

ME8361.1 Demonstrate the safety precautions exercised in the mechanical workshop.

ME8361.2 Make the workpiece as per given shape and size using Lathe.

ME8361.3 Join two metals using arc welding.

ME8361.4 Use sheet metal fabrication tools and make simple tray and funnel.

ME8361.5 Use different moulding tools, patterns and prepare sand moulds.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8361.1	-	-	H	H	H	H	-	H	H
ME8361.2	-	-	H	H	H	H	L	M	H
ME8361.3	-	L	H	M	H	M	-	H	H
ME8361.4	L	-	H	H	H	H	L	M	M
ME8361.5	-	-	H	H	H	H	-	H	H

ME8381 COMPUTER AIDED MACHINE DRAWING LABORATORY

ME8381.1 Ability to draw assembly drawings both manually and using standard CAD packages.

ME8381.2 Understand and interpret drawings of machine components.

ME8381.3 Follow the drawing standards, Fits and Tolerances.

ME8381.4 Re-create part drawings, sectional views and assembly drawings as per standards.

ME8381.5 Knowledge in handling 2D drafting, 3D modeling and Dimensioning.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8381.1	-	-	H	H	H	H	-	H	H
ME8381.2	-	-	H	H	H	H	L	M	H
ME8381.3	-	L	H	M	H	M	-	H	H
ME8381.4	L	-	H	H	H	H	L	M	M
ME8381.5	-	-	H	H	H	H	-	H	H

EE8361 ELECTRICAL ENGINEERING LABORATORY

EE8361.1 Ability to perform speed characteristic of different electrical machine.

EE8361.2 Ability to perform Load test on DC Shunt & DC Series motor.

EE8361.3 Ability to perform Speed control of DC shunt motor.

EE8361.4 Ability to perform O.C & S.C Test on a single phase transformer.

EE8361.5 Ability to perform Load test on three phase squirrel cage Induction motor.

EE8361.6 Ability to perform Speed control of three phase slip ring Induction Motor.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
EE8361.1	L	L	H	-	M	-	L	L	L
EE8361.2	L	L	H	-	M	L	L	L	L
EE8361.3	L	L	H	-	M	L	L	L	L
EE8361.4	L	L	H	-	M	L	L	L	L
EE8361.5	L	L	H	-	M	-	L	L	L
EE8361.6	L	L	H	-	M	M	L	L	L

HS8381 INTERPERSONAL SKILLS/LISTENING & SPEAKING

HS8381.1 Listen and respond appropriately.

HS8381.2 Participate in group discussions

HS8381.3 Make effective presentations

HS8381.4 Participate confidently and appropriately in conversations both formal and informal.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
HS8381.1	-	L	H	-	-	L	L	-	-
HS8381.2	-	-	H	L	-	L	L	-	-
HS8381.3	L	-	H	L	-	-	L	-	-
HS8381.4	L	-	H	L	-	L	L	-	-

SEMESTER IV

MA8452 STATISTICS AND NUMERICAL METHODS

MA8452.1 Apply the concept of testing of hypothesis for small and large samples in real life problems.

MA8452.2 Apply the basic concepts of classifications of design of experiments in the field of agriculture.

MA8452.3 Appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems.

MA8452.4 Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations.

MA8452.5 Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
MA8452.1	H	H	-	-	L	L	-	L	L
MA8452.2	H	H	-	-	-	-	-	-	-
MA8452.3	H	H	-	L	-	-	-	-	-
MA8452.4	H	M	-	-	L	L	-	M	L
MA8452.5	H	H	-	-	-	-	-	-	-

ME8492 KINEMATICS OF MACHINERY

ME8492.1 Discuss the basics of mechanism.

ME8492.2 Calculate velocity and acceleration in simple mechanisms.

ME8492.3 Develop CAM profiles.

ME8492.4 Solve problems on gears and gear trains.

ME8492.5 Examine friction in machine elements.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8492.1	H	H	H	-	H	L	-	-	-
ME8492.2	H	H	H	-	H	-	-	-	L
ME8492.3	H	H	H	L	H	-	L	-	-
ME8492.4	H	M	H	-	M	-	-	-	L
ME8492.5	M	H	H	-	H	-	L	-	-

ME8451 MANUFACTURING TECHNOLOGY – II

ME8451.1 Explain the mechanism of material removal processes.

ME8451.2 Describe the constructional and operational features of centre lathe and other special purpose lathes.

ME8451.3 Describe the constructional and operational features of shaper, planner, milling, drilling, sawing and broaching machines.

ME8451.4 Explain the types of grinding and other super finishing processes apart from gear manufacturing processes.

ME8451.5 Summarize numerical control of machine tools and write a part program.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8451.1	H	L	H	H	H	-	L	H	H
ME8451.2	H	-	H	H	H	L	-	H	H
ME8451.3	H	L	H	H	H	-	L	H	H
ME8451.4	H	-	M	H	H	L	-	M	H
ME8451.5	H	L	H	H	H	-	L	H	H

ME8491 ENGINEERING METALLURGY

ME8491.1 Explain alloys and phase diagram, Iron-Iron carbon diagram and steel classification.

ME8491.2 Explain isothermal transformation, continuous cooling diagrams and different heat treatment processes.

ME8491.3 Clarify the effect of alloying elements on ferrous and non-ferrous metals.

ME8491.4 Summarize the properties and applications of non metallic materials.

ME8491.5 Explain the testing of mechanical properties.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8491.1	-	-	L	-	-	L	H	L	L
ME8491.2	-	L	-	L	L	-	H	-	-
ME8491.3	-	-	-	-	-	L	H	-	-
ME8491.4	L	-	L	-	L	-	H	M	L
ME8491.5	-	-	-	-	-	L	H	-	-

CE8395 STRENGTH OF MATERIALS FOR MECHANICAL ENGINEERS

CE8395.1 Understand the concepts of stress and strain in simple and compound bars, the importance of principal stresses and principal planes.

CE8395.2 Understand the load transferring mechanism in beams and stress distribution due to shearing force and bending moment.

CE8395.3 Apply basic equation of simple torsion in designing of shafts and helical spring.

CE8395.4 Calculate the slope and deflection in beams using different methods.

CE8395.5 Analyze and design thin and thick shells for the applied internal and external pressures.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CE8395.1	H	H	H	H	-	-	-	L	-
CE8395.2	H	H	H	H	L	-	L	-	L
CE8395.3	H	H	H	H	-	-	-	-	-
CE8395.4	M	H	H	H	-	L	-	L	-
CE8395.5	H	H	H	H	-	-	-	-	-

ME8493 THERMAL ENGINEERING – I

ME8493.1 Apply thermodynamic concepts to different air standard cycles and solve problems.

ME8493.2 Solve problems in single stage and multistage air compressors.

ME8493.3 Explain the functioning and features of IC engines, components and auxiliaries.

ME8493.4 Calculate performance parameters of IC Engines.

ME8493.5 Explain the flow in Gas turbines and solve problems.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8493.1	H	H	-	L	H	-	L	-	-
ME8493.2	H	H	L	-	H	L	L	-	-
ME8493.3	H	H	-	-	H	-	L	-	-
ME8493.4	H	H	-	L	H	L	-	-	-
ME8493.5	H	H	-	-	H				

ME8462 MANUFACTURING TECHNOLOGY LABORATORY – II

ME8462.1 Use different machine tools to manufacturing gears.

ME8462.2 Ability to use different machine tools to manufacturing gears.

ME8462.3 Ability to use different machine tools for finishing operations.

ME8462.4 Ability to manufacture tools using cutter grinder.

ME8462.5 Develop CNC part programming.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8462.1	-	L	H	-	L	-	L	-	L
ME8462.2	L	-	H	L	-	L	L	-	L
ME8462.3	L	L	H	L	-	M	L	-	L
ME8462.4	L	-	H	L	-	L	L	-	-
ME8462.5	-	L	H	-	L	-	L	-	L

CE8381 STRENGTH OF MATERIALS AND FLUID MECHANICS AND MACHINERY LABORATORY

CE8381.1 Understand the mechanical properties of materials when subjected to different types of loading.

CE8381.2 Ability to perform Tension & Torsion tests on Solid materials.

CE8381.3 Ability to perform Hardness & Compression test on Solid materials.

CE8381.4 Ability to perform Deformation test on Solid materials.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CE8381.1	L	-	H	L	-	L	L	-	L
CE8381.2	L	L	H	L	-	-	L	-	L
CE8381.3	L	-	H	L	-	L	L	-	-
CE8381.4	-	L	H	-	L	-	L	-	L

HS8461 ADVANCED READING AND WRITING

HS8461.1 Write different types of essays.

HS8461.2 Write winning job applications.

HS8461.3 Read and evaluate texts critically.

HS8461.4 Display critical thinking in various professional contexts.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
HS8461.1	-	L	L	-	-	H	-	-	H
HS8461.2	-	-	L	L	-	H	-	-	H
HS8461.3	L	-	L	L	-	H	-	-	H
HS8461.4	L	-	L	M	-	H	-	-	H

SEMESTER V

ME8595 THERMAL ENGINEERING – II

ME8595.1 Solve problems in Steam Nozzle.

ME8595.2 Explain the functioning and features of different types of Boilers and auxiliaries and calculate performance parameters.

ME8595.3 Explain the flow in steam turbines, draw velocity diagrams for steam turbines and solve problems.

ME8595.4 Summarize the concept of Cogeneration, Working features of Heat pumps and Heat exchangers.

ME8595.5 Solve problems using refrigerant table / charts and psychrometric charts.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8595.1	H	H	L	M	H	L	L	H	M
ME8595.2	H	H	L	L	H	L	L	H	L
ME8595.3	H	H	L	L	H	L	L	H	L
ME8595.4	H	H	L	L	H	L	L	H	L
ME8595.5	H	H	L	M	H	L	L	H	L

ME8593 DESIGN OF MACHINE ELEMENTS

ME8593.1 Understand the influence of steady and variable stresses in machine component design.

ME8593.2 Apply the concepts of design to shafts, keys and couplings.

ME8593.3 Apply the concepts of design to temporary and permanent joints.

ME8593.4 Apply the concepts of design to energy absorbing members, connecting rod and crank shaft.

ME8593.5 Apply the concepts of design to bearings.

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8593.1	L	H	M	H	L	L	H	H	H
ME8593.2	L	H	L	H	L	L	H	H	H
ME8593.3	M	H	L	H	L	L	H	H	H
ME8593.4	L	H	L	H	L	M	H	H	H
ME8593.5	L	H	L	H	L	L	H	H	H

ME8501 METROLOGY AND MEASUREMENTS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8501.1	H	L	H	H	M	L	H	H	L
ME8501.2	H	L	H	H	L	L	H	H	L
ME8501.3	H	L	H	H	L	L	H	H	L
ME8501.4	H	L	H	H	L	L	H	H	L
ME8501.5	H	L	H	H	L	L	H	H	L

ME8594 DYNAMICS OF MACHINES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8594.1	H	H	H	-	H	-	H	-	H
ME8594.2	H	H	H	L	H	L	H	L	H
ME8594.3	H	H	H	L	H	-	H	L	H
ME8594.4	H	H	H	-	H	-	H	-	H
ME8594.5	H	H	H	L	H	L	H	L	H

ME8511 KINEMATICS AND DYNAMICS LABORATORY

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8511.1	H	H	H	H	L	L	-	L	-
ME8511.2	H	H	H	H	L	L	-	L	L

ME8512 THERMAL ENGINEERING LABORATORY

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8512.1	H	H	H	-	L	-	-	-	-
ME8512.2	H	H	H	L	L	L	-	L	-
ME8512.3	H	H	H	L	L	L	-	L	L
ME8512.4	H	H	H	-	L	-	-	-	-
ME8512.5	H	H	H	L	L	L	-	L	L

ME8513 METROLOGY AND MEASUREMENTS LABORATORY

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8513.1	H	H	H	H	L	-	H	L	-
ME8513.2	H	H	H	H	L	-	H	L	L

SEMESTER VI

ME8651 DESIGN OF TRANSMISSION SYSTEMS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8651.1	L	H	L	H	L	-	H	L	H
ME8651.2	L	H	-	H	-	-	H	L	H
ME8651.3	L	H	M	H	L	L	H	L	H
ME8651.4	L	H	L	H	-	-	H	L	H
ME8651.5	L	H	L	H	L	-	H	L	H

ME8691 COMPUTER AIDED DESIGN AND MANUFACTURING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8691.1	M	H	H	L	H	L	L	L	L
ME8691.2	L	H	H	L	H	L	M	L	L
ME8691.3	L	H	H	M	H	L	L	L	M
ME8691.4	L	H	H	L	H	L	L	M	L
ME8691.5	L	H	H	L	H	M	L	L	L

ME8693 HEAT AND MASS TRANSFER

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8693.1	H	H	H	H	M	L	L	H	H
ME8693.2	H	H	H	H	L	L	L	H	H
ME8693.3	H	H	H	H	L	L	L	H	H
ME8693.4	H	H	H	H	L	L	L	H	H
ME8693.5	H	H	H	H	M	L	L	H	H

ME8692 FINITE ELEMENT ANALYSIS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8692.1	H	H	L	H	L	L	L	L	H
ME8692.2	H	H	L	H	L	L	M	L	H
ME8692.3	H	H	L	H	L	M	L	L	H
ME8692.3	H	H	M	H	L	L	L	L	H
ME8692.4	H	H	L	H	L	L	L	M	H
ME8692.5	H	H	L	H	L	L	L	L	H

ME8694 HYDRAULICS AND PNEUMATICS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8694.1	H	H	-	H	H	L	-	H	-
ME8694.2	H	H	L	H	H	L	-	H	L
ME8694.3	H	H	L	H	M	-	-	H	-
ME8694.4	H	H	L	H	H	L	-	H	-
ME8694.5	H	H	-	H	H	L	-	H	L

ME8681 CAD / CAM LABORATORY

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8681.1	L	H	H	L	-	H	L	-	M
ME8681.2	-	H	H	L	-	H	L	-	L

HS8581 PROFESSIONAL COMMUNICATION

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
HS8581.1	-	L	L	-	-	H	H	-	H
HS8581.2	-	-	L	L	-	H	H	-	H
HS8581.3	-	-	-	-	-	H	H	-	H
HS8581.4	-	L	L	-	-	H	H	-	H

SEMESTER VII

ME8792 POWER PLANT ENGINEERING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8792.1	H	H	H	H	L	L	-	H	-
ME8792.2	H	H	H	M	L	-	L	H	L
ME8792.3	H	M	H	H	-	-	L	H	M
ME8792.4	H	H	H	M	L	-	L	H	-
ME8792.5	H	H	H	H	-	L	-	H	L

ME8791 MECHATRONICS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8792.1	H	H	H	L	H	L	-	H	H
ME8792.2	H	H	H	L	M	-	L	H	H
ME8792.3	H	M	H	-	H	-	L	H	H
ME8792.4	H	H	H	-	M	-	L	H	H
ME8792.5	H	H	H	-	H	L	-	H	H

ME8793 PROCESS PLANNING AND COST ESTIMATION

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8793.1	-	H	-	H	L	-	L	-	L
ME8793.2	L	H	L	H	-	L	-	L	L
ME8793.3	--	H	L	H	-	-	-	L	M
ME8793.4	L	H	L	H	-	L	-	L	L
ME8793.5	-	H	-	H	L	-	L	-	L

ME8711 SIMULATION AND ANALYSIS LABORATORY

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8711.1	H	L	L	L	H	L	H	L	L
ME8711.2	H	L	L	L	H	L	H	M	L
ME8711.3	H	L	L	L	H	L	H	L	L

ME8781 MECHATRONICS LABORATORY

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8781.1	H	H	H	L	H	L	-	H	H
ME8781.2	H	H	H	L	M	-	L	H	H

ME8712 TECHNICALSEMINAR

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8712.1	L	-	L	-	-	H	-	-	L

MG8591 PRINCIPLES OF MANAGEMENT

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
MG8591.1	-	-	M	M	L	H	H	M	H
MG8591.2	L	L	L	L	-	H	M	L	H
MG8591.3	L	-	L	M	-	H	M	-	H
MG8591.4	L	-	L	L	M	H	M	L	H
MG8591.5	-	-	M	L	L	H	M	-	H

ME8811 PROJECT WORK

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8811.1	H	H	H	M	L	H	H	L	M

ME8091 AUTOMOBILE ENGINEERING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8091.1	H	M	L	M	H	-	-	L	M
ME8091.2	H	M	M	L	H	-	L	M	L

ME8091.3	M	L	M	L	H	L	-	L	M
ME8091.4	H	-	L	L	H	-	L	L	L
ME8091.5	H	L	L	L	M	-	-	L	L

PR8592 WELDING TECHNOLOGY

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
PR8592.1	L	L	L	H	L	-	L	M	H
PR8592.2	L	M	L	M	-	L	L	L	H
PR8592.3	M	L	M	H	M	L	M	M	H
PR8592.4	M	L	M	H	L	-	L	L	M
PR8592.5	L	L	L	H	L	L	M	M	H

ME8096 GAS DYNAMICS AND JET PROPULSION

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8096.1	H	L	M	H	H	-	L	L	L
ME8096.2	H	L	M	H	H	L	-	L	L
ME8096.3	H	M	L	H	H	-	L	L	M
ME8096.4	H	-	-	H	H	L	-	L	L
ME8096.5	H	-	L	H	H	M	-	L	L

GE8075 INTELLECTUAL PROPERTY RIGHTS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
GE8075.1	L	M	-	H	L	L	M	L	M

GE8073 FUNDAMENTALS OF NANOSCIENCE

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
GE8073.1	H	L	L	H	H	-	M	H	L
GE8073.2	H	L	L	H	H	L	L	H	-
GE8073.3	H	L	M	H	H	M	L	H	L

ME8071 REFRIGERATION AND AIR CONDITIONING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8071.1	L	L	H	H	L	M	L	H	L
ME8071.2	L	L	M	H	M	M	M	H	L
ME8071.3	L	M	H	H	L	M	L	H	L
ME8071.4	L	L	H	M	M	M	L	H	L
ME8071.5	L	M	H	H	L	M	L	H	M

ME8072 RENEWABLE SOURCES OF ENERGY

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8072.1	L	-	M	L	L	L	L	M	M
ME8072.2	L	M	M	M	L	M	L	L	L
ME8072.3	M	L	M	H	M	L	M	M	L
ME8072.4	M	M	M	L	L	M	L	L	H
ME8072.5	L	L	H	M	M	L	M	M	M

ME8098 QUALITY CONTROL AND RELIABILITY ENGINEERING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8098.1	H	M	L	H	H	L	L	H	L
ME8098.2	H	L	L	H	H	L	L	H	L
ME8098.3	M	M	-	M	M	L	M	M	L
ME8098.4	H	L	L	H	H	L	L	H	L
ME8098.5	H	L	L	H	H	L	L	H	L

ME8073 UNCONVENTIONAL MACHINING PROCESSES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8073.1	L	H	M	L	-	-	L	H	H
ME8073.2	L	H	M	-	-	-	-	M	H
ME8073.3	L	H	M	-	-	-	L	M	H
ME8073.4	M	H	M	L	-	-	-	L	H
ME8073.5	L	H	M	-	-	-	L	L	H

MG8491 OPERATIONS RESEARCH

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
MG8491.1	L	H	-	L	H	-	L	M	L

MF8071 ADDITIVE MANUFACTURING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
MF8071.1	M	H	L	-	H	L	M	-	H
MF8071.2	L	H	-	L	M	-	L	-	H
MF8071.3	M	H	M	L	H	-	-	L	M

GE8077 TOTAL QUALITY MANAGEMENT

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
GE8077.1	L	M	H	M	H	L	H	M	L

ME8099 ROBOTICS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9

ME8099.1	H	M	L	H	H	L	H	H	M
ME8099.2	H	M	L	H	H	L	H	H	L
ME8099.3	H	L	L	H	H	M	H	H	M
ME8099.4	H	M	M	H	H	L	H	H	L
ME8099.5	H	L	L	H	H	L	H	H	L

ME8095 DESIGN OF JIGS, FIXTURES AND PRESS TOOLS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8095.1	H	H	L	L	H	L	M	M	H
ME8095.2	H	H	L	L	H	L	L	L	H
ME8095.3	H	H	L	L	H	L	M	L	H
ME8095.4	H	H	L	M	H	L	L	L	H
ME8095.5	H	H	L	L	H	L	L	L	H

ME8093 COMPUTATIONAL FLUID DYNAMICS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8093.1	H	L	M	-	H	M	H	-	H
ME8093.2	H	-	M	-	H	-	H	L	H
ME8093.3	H	L	-	M	H	-	H	-	H
ME8093.4	H	M	-	L	H	-	H	M	H
ME8093.5	H	L	M	-	H	-	H	L	H

ME8097 NON DESTRUCTIVE TESTING AND EVALUATION

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8097.1	L	H	-	H	-	H	-	M	H
ME8097.2	-	H	-	H	L	H	L	L	H
ME8097.3	L	H	-	H	L	H	-	L	H
ME8097.4	L	H	-	H	-	H	L	L	H
ME8097.5	-	H	L	H	-	H	-	L	H

ME8092 COMPOSITE MATERIALS AND MECHANICS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8092.1	H	-	H	L	L	H	-	L	H
ME8092.2	H	-	H	-	L	H	-	-	H
ME8092.3	H	-	H	L	-	H	-	-	H
ME8092.4	H	-	H	-	L	H	L	-	H
ME8092.5	H	-	H	-	-	H	L	L	H

GE8074 HUMAN RIGHTS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
GE8074.1	L	L	H	-	-	L	-	H	H

GE8071 DISASTER MANAGEMENT

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8071.1	-	H	H	-	L	H	-	L	L
ME8071.2	-	M	H	L	L	H	L	-	-
ME8071.3	-	H	H	-	-	M	-	L	L
ME8071.4	-	H	H	L	-	H	L	-	-

IE8693 PRODUCTION PLANNING AND CONTROL

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
IE8693.1	H	M	-	L	H	-	L	H	H
IE8693.2	H	L	L	L	H	L	L	H	H
IE8693.3	H	M	-	L	H	L	L	H	H

MG8091 ENTREPRENEURSHIP DEVELOPMENT

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
MG8091.1	H	L	-	-	L	H	-	-	H

ME8094 COMPUTER INTEGRATED MANUFACTURING SYSTEMS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8094.1	-	H	L	L	H	L	L	-	H
ME8094.2	L	H	-	-	H	-	-	L	H
ME8094.3	-	H	L	L	H	-	-	L	H
ME8094.4	L	H	L	-	M	-	-	L	H
ME8094.5	-	H	L	L	M	L	L	-	H

ME8074 VIBRATION AND NOISE CONTROL

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
ME8074.1	M	H	H	L	H	L	H	M	H
ME8074.2	M	H	H	L	H	M	L	L	H
ME8074.3	L	M	H	L	H	H	L	M	H
ME8074.4	M	M	H	L	M	M	H	M	M
ME8074.5	M	H	H	L	H	L	L	L	H

EE8091 MICRO ELECTRO MECHANICAL SYSTEMS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
EE8091.1	M	H	-	-	L	L	H	H	L
EE8091.2	L	H	L	L	L	M	H	H	M

GE8076 PROFESSIONAL ETHICS IN ENGINEERING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
GE8076.1	H	-	L	M	M	-	-	L	H
GE8076.2	H	-	L	M	M	-	-	L	H
GE8076.3	H	-	L	-	M	-	-	L	M
GE8076.4	H	-	L	L	M	-	-	L	M
GE8076.5	H	-	L	-	M	-	-	L	H