JEPPIAAR INSTITUTE OF TECHNOLOGY

"Self Belief | Self Discipline | Self Respect"

REGULATION - 2017

DEPARTMENT OF MECHANICAL ENGIEEERING

I - VIII SEMESTERS CURRICULUM & SYLLABUS

SEMESTER 1						
S.NO	**COURSE CODE**	**COURSE TITLE**	**L**	**T**	**P**	**C**
THEORY						
1	HS8151	Communicative english	4	0	0	4
2	MA8151	Engineering Mathematics – I	4	0	0	4
3	PH8151	Engineering Physics	3	0	0	3
4	CY8151	Engineering Chemistry	3	0	0	3
5	GE8151	Problem Solving and Python Programming	3	0	0	3
6	GE8152	Engineering Graphics	6	0	4	4
PRACTICALS						
7	GE8161	Problem Solving and Python Programming Laboratory	0	0	4	2
8	BS8161	Physics and Chemistry laboratory	0	0	4	2
SEMESTER 2						
S.NO	**COURSE CODE**	**COURSE TITLE**	**L**	**T**	**P**	**C**
THEORY						
1	HS8251	Technical English	4	0	0	4
2	MA8251	Engineering Mathematics – II	3	0	0	3
3	PH8251	Material Science	3	0	0	3
4	BE8253	Basic Electrical, Electronics and Instrumentation Engine	3	0	0	3
5	GE8291	Environmental Science and Engineering	3	0	0	3
6	GE8292	Engineering Mechanics	3	2	0	4
PRACTICALS						
7	GE8261	Engineering Practices laboratory	0	0	4	2
8	BE8261	Basic Electrical, Electronics and Instrumentation Laboratory	0	0	4	2

SEMESTER 3						
S.NO	**COURSE CODE**	**COURSE TITLE**	**L**	**T**	**P**	**C**
THEORY						
1	MA8353	Transforms and Partial Differential Equations	4	0	0	4
2	ME8391	Engineering Thermodynamics	5	2	0	4
3	CE8394	Fluid Mechanics and Machinery	4	0	0	4
4	ME8351	Manufacturing Technology I	3	0	0	3
5	EE8353	Electrical Drives and Controls	3	0	0	3
PRACTICALS						
6	ME8361	Manufacturing Technology Laboratory I	0	0	4	2
7	ME8381	Computer Aided Machine Drawing	0	0	4	2
8	EE8361	Electrical Engineering Laboratory	0	0	4	2
9	HS8381	Interpersonal skill/Listening & Speaking	0	0	2	1
SEMESTER 4						
S.NO	**COURSE CODE**	**COURSE TITLE**	**L**	**T**	**P**	**C**
THEORY						
1	MA8452	Statistics and Numerical Methods	4	0	0	4
2	ME8492	Kinematics of Machinery	3	0	0	3
3	ME8451	Manufacturing Technology II	3	0	0	3
4	ME8491	Engineering Metallurgy	3	0	0	3
5	CE8395	Strength of Materials for Mechanical Engineers	3	0	0	3
6	ME8493	Thermal Engineering I	3	0	0	3
PRACTICALS						
7	ME8462	Manufacturing Technology Laboratory II	0	0	4	2
8	CE8381	Strength of Materials and Fluid Mechanics and Machinery Laboratory	0	0	4	2
9	HS8461	Advanced Reading and Writing	0	0	2	1
SEMESTER 5						
S.NO	**COURSE CODE**	**COURSE TITLE**	**L**	**T**	**P**	**C**
THEORY						
1	ME8595	Thermal Engineering II	3	0	0	3

2	ME8593	Design of Machine Elements	3	0	0	3
3	ME8501	Metrology and Measurements	3	0	0	3
4	ME8594	Dynamics of Machines	4	0	0	4
5	OAT552	Internal Combustion Engines	3	0	0	3
PRACTICALS						
6	ME8511	Kinematics and Dynamics Laboratory	0	0	4	2
7	ME8512	Thermal Engineering Laboratory	0	0	4	2
8	ME8513	Matrology and Measurements Laboratory	0	0	4	2
SEMESTER 6						
S.NO	**COURSE CODE**	**COURSE TITLE**	**L**	**T**	**P**	**C**
THEORY						
1	ME8651	Design of Transmission Systems	3	0	0	3
2	ME8691	Computer Aided Design and Manufacturing	3	0	0	3
3	ME8693	Heat and Mass Transfer	3	2	0	4
4	ME8692	Finite Element Analysis	3	0	0	3
5	ME8694	Hydraulics and Pneumatics	3	0	0	3
6	ME8091	Automobile Engineering	3	0	0	3
PRACTICALS						
7	ME8681	CAD/CAM Laboratory	0	0	4	2
8	ME8682	Design and Fabrication Project	0	0	4	2
9	HS8581	Professional Communication	0	0	2	1
SEMESTER 7						
S.NO	**COURSE CODE**	**COURSE TITLE**	**L**	**T**	**P**	**C**
THEORY						
1	ME8792	Power Plant Engineering	3	0	0	3
2	ME8793	Process Planning and Cost Estimation	3	0	0	3
3	ME8791	Mechatronics	3	0	0	3
4	OML751	Testing of Materials	3	0	0	3
5	ME8073	Unconventional Machining Processes	3	0	0	3
6	ME8097	Non Destructive Testing and Evaluation	3	0	0	3

PRACTICALS						
7	ME8711	Simulation and Analysis Laboratory	0	0	4	2
8	ME8781	Mechatronics Laboratory	0	0	4	2
9	ME8712	Technical Seminar	0	0	2	1
SEMESTER 8						
S.NO	**COURSE CODE**	**COURSE TITLE**	**L**	**T**	**P**	**C**
THEORY						
1	MG8591	Principles of Management	3	0	0	3
2		Professional Elective-IV	3	0	0	3
PRACTICALS						
3	ME8811	Project Work			20	10

SEMESTER 1

Course Outcome No.101

Subject Code & Name : HS8151 -communicative english **Department: MECH** **Year/Sem: I/01**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO101.1	Enable the development of basic grammar to enhance language for a better communication	K3, A2
CO101.2	Strengthen general comprehending skills and present lucid skills in free writing	K2, A2
CO101.3	Foster an environment for reading and develop good language skills.	A2
CO101.4	Speak, read and write effectively for a variety of professional and social settings	A2
CO101.5	Listen, comprehend and respond to different spoken and written discourses/excerpts in different accents and write different genres of texts adopting various writing strategies.	A3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO101.1	K3, A2	-	-	-	-	-	-	-	-	-	2	-	3			
CO101.2	K2, A2	-	-	-	-	-	-	-	-	2	2	-	3			
CO101.3	A2	-	-	-	-	-	-	-	-	-	2	-	3			
CO101.4	A2	-	-	-	-	-	-	-	-	-	2	-	3			
CO101.5	A3	-	-	-	-	-	-	-	-	3	2	-	3			

Course Outcome No.102

Subject Code & Name : MA8151 - Engineering Mathematics – I **Department: MECH** **Year/Sem: I/01**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO102.1	Use both the limit definition and rules of differentiation to differentiate functions	K2
CO102.2	Associate differentiation to solve maxima and minima problems	K2
CO102.3	Discuss integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus Also Evaluate integrals using techniques of integr	K2
CO102.4	Associate integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to change of order and change of variables	K2
CO102.5	Explain various techniques in solving differential equations	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
C102.1	K2	2	1													
C102.2	K2	2	1													
C102.3	K2	2	1													
C102.4	K2	2	1													
C102.5	K2	2	1													

Course Outcome No.103

Subject Code & Name :PH8151 - Engineering Physics **Department: MECH** **Year/Sem: I/01**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO103.1	Explain the basics of properties of matter and its applications.	K2
CO103.2	Identify the concepts of waves and optical devices and their applications in fibre optics	K2
CO103.3	Demonstrate the concepts of thermal properties of materials and their applications in expansion joints and heat exchangers	K2
CO103.4	Describe advanced physics concepts of quantum theory and its applications in tunneling microscopes	K2
CO103.5	Summarize the basics of crystals and their structures and different crystal growth techniques	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO103.1	K2	2	1								2					
CO103.2	K2	2	1								2					
CO103.3	K3	2	1								2					
CO103.4	K2	2	1								2					
CO103.5	K2	2	1								2					

Course Outcome No.104

Subject Code & Name :CY8151-Engineering Chemistry **Department: MECH** **Year/Sem: I/01**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO104.1	Predict the type of troubles present in boilers and the methods used to treat hard water.	K2
CO104.2	Identify the factors affecting the rate of adsorption and catalytic activity.	K2
CO104.3	Interpret the Concept of phase rule, its various phase diagrams and predict the low melting alloys	K2
CO104.4	Enumerate various solid, liquid and gaseous fuels, manufacturing methods and basic reactions involved in combustion reactions	K2
CO104.5	Classify the types of batteries, their reactions and the significance of storage renewable energy resources.	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO104.1	K2	2	1								2					
CO104.2	K2	2	1								2					
CO104.3	K2	2	1								2					
CO104.4	K2	2	1								2					
CO104.5	K2	2	1								2					

Course Outcome No.105

Subject Code & Name : GE8151-problem solving and python programming **Department: MECH** **Year/Sem: I/01**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO105.1	Discuss the logical solutions through Flowcharts, Algorithms and Pseudo code.	K2
CO105.2	Explain the syntax for python programming constructs.	K2
CO105.3	Compute the flow of the program to obtain the programmatic solution.	K2
CO105.4	Examine the programs with sub problems using 'Python' language	K3
CO105.5	Compute the compound data using Python lists, tuples, and dictionaries	K2
CO105.6	Apply python programs to read and write data from/to files	K3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO105.1	K2	2	1	1	1	-	-	-	-	-	-	-	-	-	-	
CO105.2	K2	2	1	1	1	2	-	-	-	-	-	-	-	-	-	
CO105.3	K2	2	1	1	1	2	-	-	-	-	-	-	-	-	-	
CO105.4	K3	3	2	2	1	3	-	-	-	-	-	-	-	-	-	
CO105.5	K2	2	1	1	1	2	-	-	-	-	-	-	-	-	-	
CO105.6	K3	3	2	2	1	3	-	-	-	-	-	-	-	-	-	

Course Outcome No.106

Subject Code & Name : GE8152 - Engineering Graphics **Department: MECH** **Year/Sem: I/01**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO106.1	Discuss about conics and orthographic views of engineering components.	K2
CO106.2	Draw the projection of points, lines and planes.	K1
CO106.3	Classify solids and projection of solids at different positions.	K3
CO106.4	Show sectioned view of solids and development of surface.	K3
CO106.5	Draw isometric projection and perspective views of an object/solid.	K1
CO106.6	Apply the concept of drawing in practical applications.	K3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO106.1	K2	2									2					
CO106.2	K1	1									1					
CO106.3	K3	3									3					
CO106.4	K3	3									3					
CO106.5	K1	1									1					
CO106.6	K3	3		2							3					

Course Outcome No.107

Subject Code & Name : GE8161- Problem solving and python programming laborator Department: MECH **Year/Sem: I/01**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO107.1	Write, test, and debug simple Python programs.	K1
CO107.2	Apply the concept of conditionals and loops in Python programs.	K3
CO107.3	Develop the Python programs step-wise by defining functions and calling them.	K3
CO107.4	Use Python lists, tuples, dictionaries for representing compound data.	K3
CO107.5	Read and write data from/to files in Python.	K1
CO107.6	Apply the concept of Pygame.	K3
CO107.7	Exhibit ethical principles in engineering practices.	A3
CO107.8	Perform task as an individual and / or team member to manage the task in time.	A3
CO107.9	Express the Engineering activities with effective presentation and report.	A3
CO107.10	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO107.1	K1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	
CO107.2	K3	3	2	2	1	3	-	-	-	-	-	-	-	-	-	
CO107.3	K3	3	3	3	2	3	-	-	-	-	-	-	-	-	-	
CO107.4	K3	3	2	2	1	3	-	-	-	-	-	-	-	-	-	
CO107.5	K1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	
CO107.6	K3	3	2	2	1	3	-	-	-	-	-	-	-	-	-	
CO107.7	A3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	
CO107.8	A3	-	-	-	-	-	-	-	-	3	-	3	-	-	-	
CO107.9	A3	-	-	-	-	-	-	-	-	-	3	-	-	-	-	
CO107.10	A2	-	-	-	-	-	-	-	-	-	-	-	3	-	-	

Course Outcome No.108

Subject Code & Name :BS8161 -Physics and chemistry laboratory **Department: MECH** **Year/Sem: I/01**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO108.1	Determine the Modulus of elasticity of materials and Coefficient of Viscosity of liquids.	K2
CO108.2	Determine the Thermal Conductivity of bad conductor using Lee's disc method	K2
CO108.3	Calculate the Compressibility of liquids and velocity of ultrasonic waves in liquids.	K2
CO108.4	Measure the wavelength of prominent spectral lines of Mercury Spectrum and particle size of powder using diffraction phenomenon and thickness of thin materials using interference phenomenon.	K2
CO108.5	Determine the band gap energy of a semiconductor.	K2
CO108.6	Calculate water quality parameters such as hardness, alkalinity of the given water sample.	K2
CO108.7	Estimate the amount of the given acids using conductometric titrations.	K2
CO108.8	Estimate the amount of the given acids using pH titrations.	K2
CO108.9	Determine the amount of iron content in the given substance using potentiometric titration.	K2
CO108.10	Determine the amount of chloride content in the given water sample.	K2
CO108.11	Exhibit ethical principles in engineering practices.	A3
CO108.12	Perform task as an individual and / or team member to manage the task in time.	A3
CO108.13	Express the Engineering activities with effective presentation and report.	A3
CO108.14	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO108.1	**K2**	2	1													
CO108.2	**K2**	2	1													
CO108.3	**K2**	2	1													
CO108.4	**K2**	2	1													
CO108.5	**K2**	2	1													
CO108.6	**K2**	2	1													
CO108.7	**K2**	2	1													
CO108.8	**K2**	2	1													
CO108.9	**K2**	2	1													
CO108.10	**K2**	2	1													
CO108.11	**A3**								3							
CO108.12	**A3**									3		3				
CO108.13	**A3**										3					
CO108.14	**A2**												3			

SEMESTER-2

Course Outcome No.109

Subject Code & Name : HS8251 & Technical English **Department: MECH** **Year/Sem: I/02**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO109.1	Breakdown the ideas in to its elementary constituents, analyze and act after a meaning full thought process.	K2,A2
CO109.2	Analyze the phrase and passage and explicitly pass on the ideas meaning fully.	K3,A2
CO109.3	Manage to interpret the given phrase or the graphical rendering and review the contentswell individually or as a group.	K3,A2
CO109.4	Concentrate on the communication aspect of complicated ideas and respond positively.	A2
CO109.5	Debate the issues and find the rudiments of the problem individually and as a group.And respond intelligently and seek clarification and understand completely.	A3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO109.1	K2,A2	-	-	-	-	-	-	-	-	-	2	-	3	-	-	-
CO109.2	K3,A2	-	-	-	-	-	-	-	-	2	2	-	3	-	-	-
CO109.3	K3,A2	-	-	-	-	-	-	-	-	-	2	-	3	-	-	-
CO109.4	A2	-	-	-	-	-	-	-	-	-	2	-	3	-	-	-
CO109.5	A3	-	-	-	-	-	-	-	-	3	3	-	2	-	-	-

Course Outcome No.110

Subject Code & Name : MA8251 & Engineering Mathematics – II **Department: MECH** **Year/Sem: I/02**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO110.1	Diagonalize symmetric matrices and similar matrices using Eigen values andEigen vectors.	K2
CO110.2	Explain gradients, potential functions, and directional derivatives of functions of several variables. Also Compute line, surface and volume integral using Gauss	K2
CO110.3	Discuss analytic functions in heat and fluid flow.	K2
CO110.4	Extend the concept of contour integrals in evaluating Real integrals.	K2
CO110.5	Discuss Laplace Transform methods to solve initial value problems for constantcoefficient linear ODEs.	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO110.1	K2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
CO110.2	K2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
CO110.3	K2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
CO110.4	K2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
CO110.5	K2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-

Course Outcome No.111

Subject Code & Name : PH8251 & Material Science **Department: MECH** **Year/Sem: I/02**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO111.1	Explain phase rule, lever rule, Tie-Line rule, solid solutions, various phase diagrams and their applications	K2
CO111.2	Illustrate Fe-Fe3C phase diagram, microstructures of steel during cooling and alloys	K2
CO111.3	Describe mechanical properties of materials and their measurements.	K2
CO111.4	Demonstrate magnetic, dielectric and superconducting properties of materials	K2
CO111.5	Elucidate the basics of ceramics, composites, metallic glasses, smart materials, nanomaterial and carbon nanotubes	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO111.1	K3	2	2	-	-	-	-	-	3	-	-	-	-	-	-	-
CO111.2	K3	2	2	-	-	-	-	-	3	-	-	-	-	-	-	-
CO111.3	K2	2	2	-	-	-	-	-	1	-	-	-	-	-	-	-
CO111.4	K2	2	2	-	-	-	-	-	1	-	-	-	-	-	-	-
CO111.5	K2	2	2	-	-	-	-	-	1	-	-	-	-	-	-	-

Course Outcome No.112

Subject Code & Name : BE8253 & Basic Electrical, Electronics and Instrumentation Engineering **Department: MECH** **Year/Sem: I/02**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO112.1	Discussing the electric circuits fundamentals and solving the network by using various Theorems. and working principles of electrical machines	K2
CO112.2	Analysing the Concepts of A.C. Circuits and House wiring,Industrial wiring	K2
CO112.3	Explaining the construction, working principle of AC and DC machines.	K2
CO112.4	Explaining the concepts of various electronic devices and circuits and its applications	K2
CO112.5	Discussing about various instruments for electrical measurement for a specific application	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO112.1	K2	2	1	1	-	-	-	-	-	-	-	-	-	3	-	-
CO112.2	K2	3	2	2	-	-	-	-	-	-	-	-	-	3	-	-
CO112.3	K2	3	2	2	-	-	-	-	-	-	-	-	-	3	-	-
CO112.4	K2	3	2	2	-	-	-	-	-	-	-	-	-	3	-	-
CO112.5	K2	3	3	3	2	3	-	-	-	-	-	-	-	3	-	-

Course Outcome No.113

Subject Code & Name : GE8291 & Environmental Science and Engineering **Department: MECH** **Year/Sem: I/02**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO113.1	Interpret the basic concept of Ecosystems and Biodiversity.	K2
CO113.2	Distinguish the types of pollution and its control measures.	K2
CO113.3	Describe the importance of natural resources and Disaster management.	K2
CO113.4	Illustrate the importance of environment by assessing its impact on the human world.	K2
CO113.5	Summarize the population related issues and types of welfare programmes in the society.	K1

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO113.1	K2	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-
CO113.2	K2	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-
CO113.3	K2	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-
CO113.4	K2	-	-	-	-	-	2	2	2	-	-	-	-	-	-	-
CO113.5	K1	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-

Course Outcome No.114

Subject Code & Name : GE8292 & Engineering Mechanics **Department:** MECH **Year/Sem:** I/02

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO114.1	Compute the resultant force for planar and spatial system of forces.	K2
CO114.2	Estimate the force, moment for planar and spatial system of forces.	K2
CO114.3	Compute the centroid, second moment of area, center of gravity, product moment of inertia and mass moment of inertia.	K2
CO114.4	Compute the motion parameters like displacement, velocity, acceleration using dynamics.	K2
CO114.5	Compute the reaction force by applying principles of friction and the motion parameters of rigid body.	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO114.1	K2	2	1	-	-	-	-	-	-	-	-	-	-	-	1	-
CO114.2	K2	2	1	-	-	-	-	-	-	-	-	-	-	-	1	-
CO114.3	K2	2	1	-	-	-	-	-	-	-	-	-	-	-	1	-
CO114.4	K2	2	1	-	-	-	-	-	-	-	-	-	-	-	1	-
CO114.5	K2	2	1	-	-	-	-	-	-	-	-	-	-	-	1	-

Course Outcome No.115

Subject Code & Name : GE8261 Engineering Practices laboratory **Department:** MECH **Year/Sem:** I/02

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO115.1	Apply the knowledge of pipeline connections to household fittings and industrial buildings.	K2
CO115.2	Prepare the different joints in roofs, doors, windows and furniture.	K2
CO115.3	Perform step turning operation in a lathe.	K2
CO115.4	Perform the various welding processes and know about its applications.	K2
CO115.5	Produce a funnel using sheet metal.	K2
CO115.6	Exhibit ethical principles in engineering practices.	A3
CO115.7	Perform task as an individual and / or team member to manage the task in time.	A3
CO115.8	Express the Engineering activities with effective presentation and report.	A3
CO115.9	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO115.1	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	----
CO115.2	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	----
CO115.3	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	----
CO115.4	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	----
CO115.5	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	----
CO115.6	A3								3							
CO115.7	A3									3		3				
CO115.8	A3										3					
CO115.9	A2												3			

Course Outcome No.116

Subject Code & Name : BE8261 & Basic Electrical, Electronics and Instrumentation Laboratory **Department: MECH** **Year/Sem: I/02**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO116.1	Ability to determine the speed characteristic of different electrical machines	K2
CO116.2	Ability to design simple circuits involving diodes and transistors	K2
CO116.3	Ability to use operational amplifiers	K2
CO116.4	Exhibit ethical principles in engineering practices.	A3
CO116.5	Perform task as an individual and / or team member to manage the task in time.	A3
CO116.6	Express the Engineering activities with effective presentation and report.	A3
CO116.7	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO116.1	**K2**	2	1	1	-	-	-	-	-	-	-	-	-	2	-	-
CO116.2	**K2**	2	1	1	-	-	-	-	-	-	-	-	-	2	-	-
CO116.3	**K2**	2	1	1	-	-	-	-	-	-	-	-	-	2	-	-
CO116.4	**A3**								3							
CO116.5	**A3**									3		3				
CO116.6	**A3**										3					
CO116.7	**A2**												3			

SEMESTER 3

Course Outcome No.201

Subject Code & Name :MA8353 & Transforms and Partial Differential Equations **Department: MECH** **Year/Sem: II/03**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
C201.1	Understand how to solve the given standard partial differential equations	K3
C201.2	Solve differential equations using Fourier series analysis which plays a vital role in engineering applications	K3
C201.3	Appreciate the physical significance of Fourier series techniques in solving one and two dimensional heat flow problems and one dimensional wave equ	K3
C201.4	Understand the mathematical principles on transforms and partial differential equations would provide them the ability to formulate and solve some of the	K4
C201.5	Use the effective mathematical tools for the solutions of partial differential equations by using Z transform techniques for discrete time systems	K3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
C201.1	K3	3	2	2	-	-	-	-	2	1	-	-	-	-	-	
C201.2	K3	3	2	-	-	-	-	-	3	-	-	-	-	-	-	
C201.3	K3	3	2	2	-	-	-	-	3	-	-	-	-	-	-	
C201.4	K4	2	3	3	-	-	-	-	1	1	-	-	-	-	-	
C201.5	K3	3	2	1	-	-	-	-	2	1	-	-	-	-	-	

Course Outcome No.202

Subject Code & Name : ME8391 & Engineering Thermodynamics **Department: MECH** **Year/Sem: II/03**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO202.1	Apply the first law of thermodynamics for simple open and closed systems under steady and unsteady conditions.	K3
CO202.2	Apply second law of thermodynamics to open and closed systems and calculate entropy and availability.	K3
CO202.3	Analyze performance of steam power plant.	K3
CO202.4	Understand the concept of simple thermodynamic relations of ideal and real gases.	K2
CO202.5	Analyze the properties of gas mixtures and moist air.	K3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO202.1	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO202.2	K3	3	2	2	----	----	----	----	----	----	----	----	----	2	----	
CO202.3	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO202.4	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	
CO202.5	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	

Course Outcome No.203

Subject Code & Name : CE8394 & Fluid Mechanics and Machinery **Department: MECH** **Year/Sem: II/03**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO203.1	Apply and Solve problems related to the properties of the fluids and mechanics of fluids	K2
CO203.2	Analyze the concept of dynamics of fluids, control volume approach, transportation of mass, momentum and energy principles, laws of flow through pipes etc.	K3
CO203.3	Design, solve and apply problems related to Dimensional Parameters and Analysis.	K2
CO203.4	Design and solve problems related to Similarity laws and Model Analysis.	K2
CO203.5	Design and solve problems and power required to drive the different types of pumps.	K2
CO203.6	Design and solve problems and power required to drive the different types of turbines.	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO203.1	K2	2	2	1	2	1	1			1			1	3	1	
CO203.2	K3	3	2	2	1	1	1			1			1	2	3	
CO203.3	K2	2	2	2	1	2	2			1			1	2	2	
CO203.4	K2	3	2	2	1	2	2			1			1	2	2	
CO203.5	K2	3	2	2	1	1	1			1			1	2	2	
CO203.6	K2	3	2	2	1	1	1			1			1	1	3	

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Course Outcome No.204

Subject Code & Name : ME8351 & Manufacturing Technology I **Department: MECH** **Year/Sem: II/03**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO204.1	Explain the process of making patterns, preparation of sand mould, various special casting processes and casting defects.	K2
CO204.2	Describe various fusion, pressure, friction and special welding processes, soldering and brazing processes.	K2
CO204.3	Employ the appropriate metal forming techniques to produce components like hexagonal bolt, nut etc.,	K3
CO204.4	Illustrate the various sheet metal forming processes for a specific application.	K3
CO204.5	Describe the properties and bonding techniques of plastics and various plastic molding techniques.	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO204.1	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	
CO204.2	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	
CO204.3	K3	3	2	3	----	----	----	----	----	----	----	----	----	3	----	
CO204.4	K3	3	2	3	----	----	----	----	----	----	----	----	----	3	----	
CO204.5	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	

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Course Outcome No.205

Subject Code & Name : EE8353 & Electrical Drives and Controls **Department: MECH** **Year/Sem: II/03**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO205.1	Explain the basic concepts of Electric drives and the loading conditions with selection of rating for drive motors	K2
CO205.2	Summarize the different characteristics of DC shunt motors with braking mechanisms and type of loads	K2
CO205.3	Describe the different starting methods of DC motors and three phase motors	K2
CO205.4	Contrast with the conventional and solid-state control of DC drives and their applications	K2
CO205.5	Discuss the speed control of AC machines and the using of converters in their applications	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO205.1	K2	----	----	----	----	----	2	2	1	2	2	1	----	1	2	
CO205.2	K2	----	----	----	----	----	3	1	2	3	2	1	----	----	3	
CO205.3	K2	----	----	----	----	----	2	2	1	3	3	1	----	----	3	
CO205.4	K2	----	----	----	----	----	3	2	1	3	2	1	----	----	3	
CO205.5	K2	----	----	----	----	----	3	1	3	3	2	1	----	----	3	

Course Outcome No.206

Subject Code & Name : ME8361 & Manufacturing Technology Laboratory I **Department: MECH** **Year/Sem: II/03**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO206.1	Explain the process of making patterns, preparation of sand mould, various special casting processes and casting defects.	K2
CO206.2	Describe various fusion, pressure, friction and special welding processes, soldering and brazing processes.	K2
CO206.3	Employ the appropriate metal forming techniques to produce components like hexagonal bolt, nut etc.,	K3
CO206.4	Illustrate the various sheet metal forming processes for a specific application.	K3
CO206.5	Describe the properties and bonding techniques of plastics and various plastic molding techniques.	K2
CO206.6	Exhibit ethical principles in engineering practices	A3
CO206.7	Perform task as an individual and / or team member to manage the task in time	A3
CO206.8	Express the Engineering activities with effective presentation and report.	A3
CO206.9	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO206.1	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	
CO206.2	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	
CO206.3	K3	3	2	3	----	----	----	----	----	----	----	----	----	3	----	
CO206.4	K3	3	2	3	----	----	----	----	----	----	----	----	----	3	----	
CO206.5	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	
CO206.6	A3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	
CO206.7	A3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	
CO206.8	A3	-	-	-	-	-	-	-	-	3	-	3	-	-	-	
CO206.9	A2	-	-	-	-	-	-	-	-	-	3	-	-	-	-	

Course Outcome No.207

Subject Code & Name : ME8381 & Computer Aided Machine Drawing **Department: MECH** **Year/Sem: II/03**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO207.1	Understand the drawing standards, fits and tolerances.	K2
CO207.2	Understand the 2D drafting techniques.	K3
CO207.3	Recreate part drawings using CAD software.	K3
CO207.6	Exhibit ethical principles in engineering practices	A3
CO207.7	Perform task as an individual and / or team member to manage the task in time	A3
CO207.8	Express the Engineering activities with effective presentation and report.	A3
CO207.9	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO207.1	K2	2	----	----	----	3	----	----	----	----	----	----	----	----	2	
CO207.2	K3	3	----	----	----	3	----	----	----	----	----	----	----	----	3	
CO207.3	K3	3	----	----	----	3	----	----	----	----	----	----	----	----	3	
CO207.6	A3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	
CO207.7	A3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	
CO207.8	A3	-	-	-	-	-	-	-	-	3	-	3	-	-	-	
CO207.9	A2	-	-	-	-	-	-	-	-	-	3	-	-	-	-	

Course Outcome No.208

Subject Code & Name : EE8361 & Electrical Engineering Laboratory **Department: MECH** **Year/Sem: II/03**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO208.1	skilled to perform load test O.C.C and Load characteristics of DC Shunt and DC Series generator	K5
CO208.2	ability to perform load test, O.C & S.C on a single phase transformer	K5
CO208.3	ability to find regulation of an alternator by EMF & MMF methods	K5
CO208.4	skilled to find V curves and inverted V curves of synchronous motor	K5
CO208.5	ability to find load test and speed control on sinfle phase and three phase induction motor.	K5
CO208.6	Exhibit ethical principles in engineering practices	A3
CO208.7	Perform task as an individual and / or team member to manage the task in time	A3
CO208.8	Express the Engineering activities with effective presentation and report.	A3
CO208.9	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO208.1	K5	3	3	3	3	3	-	-	-	3	-	-	-	-	-	
CO208.2	K5	3	3	3	3	3	-	-	-	3	-	-	-	-	-	
CO208.3	K5	3	3	3	3	3	-	-	-	3	-	-	-	-	-	
CO208.4	K5	3	3	3	3	3	-	-	-	3	-	-	-	-	-	
CO208.5	K5	3	3	3	3	3	-	-	-	3	-	-	-	-	-	
CO208.6	A3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	
CO208.7	A3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	
CO208.8	A3	-	-	-	-	-	-	-	-	3	-	3	-	-	-	
CO208.9	A2	-	-	-	-	-	-	-	-	-	3	-	-	-	-	

Course Outcome No.209

Subject Code & Name : HS8381& Interpersonal skill/Listening & Speaking **Department: MECH** **Year/Sem: II/03**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO209.1	Involves the students in Presentations and Group Discussions to improve the listening and speaking skills	K2
CO209.2	Analyse, distinguish and Prepare their own resume and report.	K2
CO209.3	Practice on national and international exams to improve the verbal ability of the students	K2
CO209.4	Fosters interview skills so as to be successful in them.	K2
CO209.5	Promotes adequate Soft Skills required for the workplace and long-term career.	K2
CO209.6	Exhibit ethical principles in engineering practices	A3
CO209.7	Perform task as an individual and / or team member to manage the task in time	A3
CO209.8	Express the Engineering activities with effective presentation and report.	A3
CO209.9	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO209.1	K2	-	-	-	-	-	-	-	-	-	5	-	-			
CO209.2	K2	-	-	-	-	-	-	-	-	-	5	-	-			
CO209.3	K2	-	-	-	-	-	-	-	-	-	5	-	-			
CO209.4	K2	-	-	-	-	-	-	-	-	-	5	-	-			
CO209.5	K2	-	-	-	-	-	-	-	-	-	5	-	-			
CO209.6	A3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	
CO209.7	A3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	
CO209.8	A3	-	-	-	-	-	-	-	-	3	-	3	-	-	-	
CO209.9	A2	-	-	-	-	-	-	-	-	-	3	-	-	-	-	

SEMESTER 4

Course Outcome No.210

Subject Code & Name :MA8452 Statisitcs and Numerical Methods **Department: MECH** **Year/Sem: II/04**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO210.1	Apply the concept of testing of hypothesis for small and large samples in real life problems.	K2
CO210.2	Apply the basic concepts of classifications of design of experiments in the field of agriculture.	K3
CO210.3	Appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering pro	K2
CO210.4	Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations.	K4
CO210.5	Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications	K3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO210.1	**K2**	3	3	3	2									2	3	
CO210.2	**K3**	3	3	2	2									3	3	
CO210.3	**K2**	3	3	2	2									2	3	
CO210.4	**K4**	3	3	3	3	2	1	1	1	1	1	1	3	3	3	
CO210.5	**K3**	3	3	2	2	2	1	1	1	1	1	1	3	3	3	

2

Course Outcome No.211

Subject Code & Name : ME8492 & Kinematics of Machinery **Department: MECH** **Year/Sem: II/04**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
C0211.1	Explain the basics of mechanism	K2
C0211.2	Determine velocity and acceleration in simple mechanisms	K3
C0211.3	Develop CAM profiles	K3
C0211.4	Solve problems on gears and gear trains	K3
C0211.5	Examine friction in machine elements	K3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
C0211.1	**K3**	2	2	2	----	----	----	----	----	----	----	----	----	3	----	
C0211.2	**K3**	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
C0211.3	**K3**	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
C0211.4	**K3**	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
C0211.5	**K3**	3	2	2	----	----	----	----	----	----	----	----	----	3	----	

3

Course Outcome No.212

Subject Code & Name : ME8451 & Manufacturing Technology II **Department: MECH** **Year/Sem: II/04**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO212.1	Explain the mechanics of metal cutting, cutting tool materials, tool wear and cutting fluids.	K2
CO212.2	Discuss about the constructional feature of different types of lathe and their operations.	K2
CO212.3	Describe the construction & working of shaping, milling &drilling machines and gear cutting & finishing process.	K2
CO212.4	Illustrate the various types of grinding machines and broaching machines.	K4
CO212.5	Explain the construction feature of different typesof CNC machine and manual part programming for a given component.	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO212.1	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	
CO212.2	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	
CO212.3	K2	3	2	3	----	----	----	----	----	----	----	----	----	3	----	
CO212.4	K4	3	3	3	----	----	----	----	----	----	----	----	----	3	----	
CO212.5	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	

Course Outcome No.213

Subject Code & Name : ME8491 & Engineering Metallurgy **Department: MECH** **Year/Sem: II/04**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO213.1	Explain alloys and phase diagram, Iron-Iron carbon diagram and steel classification.	K2
CO213.2	Explain isothermal transformation, continuous cooling diagrams and different heat treatment processes.	K3
CO213.3	Clarify the effect of alloying elements on ferrous and non-ferrous metals	K3
CO213.4	Summarize the properties and applications of non metallic materials.	K3
CO213.5	Explain the testing of mechanical properties. .	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO213.1	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	
CO213.2	K3	2	2	2	----	----	----	----	----	----	----	----	----	2	----	
CO213.3	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO213.4	K3	2	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO213.5	K2	2	2	2	----	----	----	----	----	----	----	----	----	2	----	

Course Outcome No.214

Subject Code & Name : CE8395 & Strength of Materials for Mechanical Engineers **Department: MECH** **Year/Sem: II/04**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO214.1	Understand the concepts of stress and strain in simple and compound bars, the importance of principal stresses and principal planes.	K2
CO214.2	Understand the load transferring mechanism in beams and stress distribution due to shearing force and bending moment.	K3
CO214.3	Apply basic equation of simple torsion in designing of shafts and helical spring	K2
CO214.4	Calculate the slope and deflection in beams using different methods.	K2
CO214.5	Analyze and design thin and thick shells for the applied internal and external pressures.	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO214.1	K2	2	2	1	2	1	1			1			1	3	1	
CO214.2	K3	3	2	2	1	1	1			1			1	2	3	
CO214.3	K2	2	2	2	1	2	2			1			1	2	2	
CO214.4	K2	3	2	2	1	2	2			1			1	2	2	
CO214.5	K2	3	2	2	1	1	1			1			1	2	2	

Course Outcome No.215

Subject Code & Name : ME8493 & Thermal Engineering I **Department: MECH** **Year/Sem: II/04**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO215.1	Apply thermodynamic concepts to different air standard cycles and solve problems.	K3
CO215.2	Solve problems in single stage and multistage air compressors	K3
CO215.3	Explain the functioning and features of IC engines, components and auxiliaries	K2
CO215.4	Calculate performance parameters of IC Engines.	K2
CO215.5	Explain the flow in Gas turbines and solve problems.	K3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO215.1	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO215.2	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO215.3	K2	2	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO215.4	K2	2	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO215.5	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	

Course Outcome No.216

Subject Code & Name : ME8462 & Manufacturing Technology Laboratory II **Department: MECH** **Year/Sem: II/04**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO216.1	Demonstrate contour milling and generate a spur gear from a cylindrical work piece.	K3
CO216.2	Experiment helical gear cutting operation and generate gear using hobbing machine	K3
CO216.3	Complete gear using gear shaping machine and demonstrate plain surface grinding operation.	K3
CO216.4	Experiment cylindrical grinding operation and practice Tool angle grinding with tool and Cutter Grinder.	K3
CO216.5	Experiment the Measure cutting forces in Milling / Turning Process and develop CNC part programming.	K3
CO216.6	Exhibit ethical principles in engineering practices	A3
CO216.7	Perform task as an individual and / or team member to manage the task in time	A3
CO216.8	Express the Engineering activities with effective presentation and report.	A3
CO216.9	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO216.1	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO216.2	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO216.3	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO216.4	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO216.5	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO216.6	A3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	
CO216.7	A3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	
CO216.8	A3	-	-	-	-	-	-	-	-	3	-	3	-	-	-	
CO216.9	A2	-	-	-	-	-	-	-	-	-	3	-	-	-	-	

Course Outcome No.217

Subject Code & Name :CE8381 & Strength of Materials and Fluid Mechanics and Machinery Laboratory **Department: MECH** **Year/Sem: II/04**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO217.1	Perform Tension, Torsion, Hardness, Compression, and Deformation test on Solid materials.	K2
CO217.2	Use the measurement equipments for flow measurement.	K3
CO217.3	Perform test on different fluid machinery.	K2
CO217.4	Exhibit ethical principles in engineering practices	A3
CO217.5	Perform task as an individual and / or team member to manage the task in time	A3
CO217.6	Express the Engineering activities with effective presentation and report.	A3
CO217.7	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO217.1	K2	2	2	2		2	2		3		2			3	1	----
CO217.2	K3	1	2	2		2	2		2		2			2	3	----
CO217.3	K2	1	1	1		1	1		2		2			2	2	----
CO217.4	A3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	
CO217.5	A3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	
CO217.6	A3	-	-	-	-	-	-	-	-	3	-	3	-	-	-	
CO217.7	A2	-	-	-	-	-	-	-	-	-	3	-	-	-	-	

Course Outcome No.218

Subject Code & Name :HS8461 & Advanced Reading and Writing **Department: MECH** **Year/Sem: II/04**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO218.1	Strengthen the reading skills of students through reading activities.	K2
CO218.2	Enhance their writing skills with specific reference to technical writing.	K2
CO218.3	Develop students' critical thinking skills	K2
CO218.4	Develop felicity of expression and familiarity with technology enabled Communication	K2
CO218.5	Foster an environment for reading and develop good language skills.	K2
CO218.6	Exhibit ethical principles in engineering practices	A3
CO218.7	Perform task as an individual and / or team member to manage the task in time	A3
CO218.8	Express the Engineering activities with effective presentation and report.	A3
CO218.9	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO218.1	K2	-	-	-	-	-	-	-	-	-	5	-	-	-	-	
CO218.2	K2	-	-	-	-	-	-	-	-	-	5	-	-	-	-	
CO218.3	K2	-	-	-	-	-	-	-	-	-	5	-	-	-	-	
CO218.4	K2	-	-	-	-	-	-	-	-	-	5	-	-	-	-	
CO218.5	K2	-	-	-	-	-	-	-	-	-	5	-	-	-	-	
CO218.6	A3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	
CO218.7	A3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	
CO218.8	A3	-	-	-	-	-	-	-	-	3	-	3	-	-	-	
CO218.9	A2	-	-	-	-	-	-	-	-	-	3	-	-	-	-	

SEMESTER 5

Course Outcome No.301

Subject Code & Name : ME8595 & Thermal Engineering II **Department: MECH** **Year/Sem: III/05**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO301.1	Solve problems in Steam Nozzle	K3
CO301.2	Explain the functioning and features of different types of Boilers and auxiliaries andcalculate performance parameters.	K2
CO301.3	Explain the flow in steam turbines, draw velocity diagrams for steam turbines and solveproblems.	K3
CO301.4	Summarize the concept of Cogeneration, Working features of Heat pumps and Heatexchangers	K2
CO301.5	Solve problems using refrigerant table / charts and psychrometric charts	K3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO301.1	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO301.2	K2	2	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO301.3	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO301.4	K2	2	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO301.5	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	

Course Outcome No.302

Subject Code & Name : ME8593 & Design of Machine Elements **Department: MECH** **Year/Sem: III/05**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO302.1	Explain the influence of steady and variable stresses in machine component design.	K2
CO302.2	Apply the concepts of design to shafts, keys and couplings.	K3
CO302.3	Apply the concepts of design to temporary and permanent joints.	K3
CO302.4	Apply the concepts of design to energy absorbing members, connecting rod and crank shaft.	K3
CO302.5	Apply the concepts of design to bearings.	K3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO302.1	K2	2	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO302.2	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO302.3	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO302.4	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO302.5	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	

Course Outcome No.303

Subject Code & Name : ME8501 & Metrology and Measurements **Department: MECH** **Year/Sem: III/05**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO303.1	Discuss the measurement systems, units and dimensions, calibration and correction.	K2
CO303.2	Explain the various linear and angular measurement systems and understand the concept of interchangeability	K2
CO303.3	Describe the working principle of auto collimator, CMM and list the applications of them.	K2
CO303.4	Explain the various form measurements like thread, gear, straightness, flatness, roundness and surface finish.	K2
CO303.5	Discuss the working of miscellaneous measuring equipment for measuring temperature, velocity, pressure.	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO303.1	K2	3	3	3	2	0	2	0	0	0	2	0	2	2	0	1
CO303.2	K2	3	3	3	2	0	2	0	0	0	2	0	2	0	0	0
CO303.3	K2	3	3	3	2	0	2	0	0	0	0	0	2	2	3	0
CO303.4	K2	3	3	3	2	0	2	0	0	0	0	0	2	0	2	1
CO303.5	K2	3	3	3	2	0	2	0	0	0	1	0	2	2	2	1

Course Outcome No.304

Subject Code & Name: ME8594 & Dynamics of Machines **Department: MECH** **Year/Sem: III/05**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO304.1	Evaluate static and dynamic forces of mechanisms.	K5
CO304.2	Evaluate the balancing masses and their locations of reciprocating and rotating masses.	K5
CO304.3	Examine the frequency of free vibration.	K4
CO304.4	Examine the frequency of forced vibration and damping coefficient.	K4
CO304.5	Evaluate the speed and lift of the governor and estimate the gyroscopic effect on automobiles, ships and airplanes.	K5

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO304.1	K5	2	2	3	---	---	---	---	---	---	---	---	---	3	---	---
CO304.2	K5	3	2	2	---	---	---	---	---	---	---	---	---	3	---	---
CO304.3	K4	3	2	3	---	---	---	---	---	---	---	---	---	3	---	---
CO304.4	K4	3	2	2	---	---	---	---	---	---	---	---	---	3	---	---
CO304.5	K5	3	2	3	---	---	---	---	---	---	---	---	---	3	---	---

Course Outcome No.305

Subject Code & Name : OAT552 & Internal Combustion Engines **Department: MECH** **Year/Sem: III/05**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO305.1	Explain the design and operating parameters of an engine and analyze thermodynamic concepts of fuel- air cycles.	K3
CO305.2	Summarize the concepts of petrol engine fuel injecction, ignition and different stages of combustion in SI engines	K4
CO305.3	Explain the concepts of Diesel engine fuel injecction, ignition and different stages of combustion in CI engines	K3
CO305.4	Analyze different cooling and lubrication systems used in IC engines	K3
CO305.5	Explain the construction and working concepts of modern technologies in IC engines.	K3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO305.1	K3	3	---	---	---	---	---	---	---	---	---	---	---	3	---	---
CO305.2	K4	3	3	---	2	---	3	---	---	---	---	---	---	3	---	---
CO305.3	K3	3	3	---	1	---	3	2	---	---	---	---	---	2	---	---
CO305.4	K3	3	---	---	---	---	3	---	---	---	---	---	---	---	---	---
CO305.5	K3	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Course Outcome No.306

Subject Code & Name :ME8511 & Kinematics and Dynamics Laboratory **Department: MECH** **Year/Sem: III/05**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO306.1	Explain gear parameters, velocity ratios of simple, compound, Epicyclic and differential gear trains.	K2
CO306.2	Explain Kinematics of Four Bar, Slider Crank, Crank Rocker, Double crank, Double rocker, Oscillating cylinder Mechanisms.	K2
CO306.3	Illustrate Cam profile drawing, Motion curves and study of jump phenomenon	K2
CO306.4	Determine mass moment of inertia of mechanical element, governor effort and range sensitivity, natural frequency and damping coefficient.	K5
CO306.5	Determine torsional frequency, critical speeds of shafts, balancing mass of rotating and reciprocating masses, and transmissibility ratio.	K5
CO306.6	Exhibit ethical principles in engineering practices	A3
CO306.7	Perform task as an individual and / or team member to manage the task in time	A3
CO306.8	Express the Engineering activities with effective presentation and report.	A3
CO306.9	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO306.1	**K2**	2	2	----	3	----	----	----	----	----	----	----	----	3	----	----
CO306.2	**K2**	2	2	----	2	----	----	----	----	----	----	----	----	3	----	----
CO306.3	**K2**	2	2	----	3	----	----	----	----	----	----	----	----	3	----	----
CO306.4	**K5**	2	2	----	2	----	----	----	----	----	----	----	----	3	----	----
CO306.5	**K5**	2	2	----	3	----	----	----	----	----	----	----	----	3	----	----
CO306.6	**A3**	2	2	2	2	-	-	-	-	-	-	-	-	-	-	----
CO306.7	**A3**	-	-	-	-	-	-	-	3	-	-	-	-	-	-	----
CO306.8	**A3**	-	-	-	-	-	-	-	-	3	-	3	-	-	-	----
CO306.9	**A2**	-	-	-	-	-	-	-	-	-	3	-	-	-	-	----

Course Outcome No.307

Subject Code & Name : ME8512 & Thermal Engineering Laboratory **Department: MECH** **Year/Sem: III/05**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO307.1	Construct the valve timing and port timing diagrams.	K5
CO307.2	Generate actual p – v diagram for an internal combustion engine.	K3
CO307.3	Analyze various performance parameters and sketch performance curves for an internal combustion engine.	K5
CO307.4	Estimate various losses in an internal combustion engine and prepare heat balance sheet.	K5
CO307.5	Identify flash and fire points of oils and lubricants.	K3
CO307.6	Analyze various performance parameters of steam generators and turbines.	K3
CO307.7	Predict the heat transfer coefficient for various engineering applications	K3
CO307.8	Analyze the performance of heat exchangers	K3
CO307.9	Apply the principles of vapour compression cycle in refrigerators and air conditioning systems.	K3
CO307.6	Exhibit ethical principles in engineering practices	A3
CO307.7	Perform task as an individual and / or team member to manage the task in time	A3
CO307.8	Express the Engineering activities with effective presentation and report.	A3
CO307.9	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO307.1	K5	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CO307.2	K3	---	---	---	2	---	---	---	---	---	---	---	---	---	---	---
CO307.3	K5	---	---	---	3	---	---	---	---	---	---	---	---	2	---	---
CO307.4	K5	---	---	---	3	---	---	---	---	---	---	---	---	2	---	---
CO307.5	K3	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CO307.6	K3	---	---	---	3	---	---	---	---	---	---	---	---	2	---	---
CO307.7	K3	---	---	---	3	---	---	---	---	---	---	---	---	3	---	---
CO307.8	K3	---	---	---	3	---	---	---	---	---	---	---	---	3	---	---
CO307.9	K3	---	---	---	3	---	---	---	---	---	---	---	---	3	---	---
CO307.6	A3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	---
CO307.7	A3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	---
CO307.8	A3	-	-	-	-	-	-	-	-	3	-	3	-	-	-	---
CO307.9	A2	-	-	-	-	-	-	-	-	-	3	-	-	-	-	---

Course Outcome No.308

Subject Code & Name : ME8513 & Metrology and Measurements Laboratory **Department: MECH** **Year/Sem: III/05**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO308.1	Check the dimensions and the dimensional deviations of given parts.	K3
CO308.2	Inspect the dimensions, angularity and parallelism of a given component.	K3
CO308.3	Construct the torque characteristic curves to various loads at various distances.	K4
CO308.4	Evaluate the straightness of surfaces and determine size of irregularities on a machined surface.	K4
CO308.5	Measure the vertical distances or height of objects, taper angle of slope for a given component, various parameters of threads and gear wheel.	K4
CO308.6	Exhibit ethical principles in engineering practices	A3
CO308.7	Perform task as an individual and / or team member to manage the task in time	A3
CO308.8	Express the Engineering activities with effective presentation and report.	A3
CO308.9	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO308.1	K3	3	3	3	2	0	2	0	0	0	2	0	2	2	0	-
CO308.2	K3	3	3	3	2	0	2	0	0	0	2	0	2	0	0	-
CO308.3	K4	3	3	3	2	0	2	0	0	0	1	0	2	2	2	-
CO308.4	K4	3	3	3	2	0	2	0	0	0	0	0	2	0	2	-
CO308.5	K4	3	3	3	2	0	2	0	0	0	0	0	2	0	2	-
CO308.6	A3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-
CO308.7	A3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
CO308.8	A3	-	-	-	-	-	-	-	-	3	-	3	-	-	-	-
CO308.9	A2	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-

SEMESTER 6

Course Outcome No.309

Subject Code & Name : ME8651 & Design of Transmission Systems **Department: MECH** **Year/Sem: III/06**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO309.1	apply the concepts of design to belts, chains and rope drives.	K3
CO309.2	apply the concepts of design to spur, helical gears.	K3
CO309.3	apply the concepts of design to worm and bevel gears.	K3
CO309.4	apply the concepts of design to gear boxes .	K3
CO309.5	apply the concepts of design to cams, brakes and clutches	K3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO309.1	K3	-	2	3	-	-	-	-	-	-	-	-	-	-	2	-
CO309.2	K3	-	2	3	-	-	-	-	-	-	-	-	-	-	2	-
CO309.3	K3	-	2	3	-	-	-	-	-	-	-	-	-	-	2	-
CO309.4	K3	-	2	3	-	-	-	-	-	-	-	-	-	-	2	-
CO309.5	K3	-	2	3	-	-	-	-	-	-	-	-	-	-	2	-

2

Course Outcome No.310

Subject Code & Name : ME8691 & Computer Aided Design and Manufacturing **Department: MECH** **Year/Sem: III/06**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO310.1	Explain the 2D and 3D transformations, clipping algorithm, Manufacturing models and Metrics	K2
CO310.2	Explain the fundamentals of parametric curves, surfaces and Solids	K2
CO310.3	Summarize the different types of Standard systems used in CAD	K2
CO310.4	Apply NC & CNC programming concepts to develop part programme for Lathe & Milling Machines	K3
CO310.5	Summarize the different types of techniques used in Cellular Manufacturing and FMS	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO310.1	K2	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-
CO310.2	K2	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-
CO310.3	K2	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-
CO310.4	K3	2	3	-	-	-	-	-	-	-	-	-	-	-	2	-
CO310.5	K2	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-

3

Course Outcome No.311

Subject Code & Name : ME8693 & Heat and Mass Transfer **Department: MECH** **Year/Sem: III/06**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO311.1	Apply heat conduction equations to different surface configurations under steady state and transient conditions and solve problems	K3
CO311.2	Apply free and forced convective heat transfer correlations to internal and external flows through/over various surface configurations and solve problems	K3
CO311.3	Explain the phenomena of boiling and condensation, apply LMTD and NTU methods of thermal analysis to different types of heat exchanger configurations and	K3
CO311.4	Explain basic laws for Radiation and apply these principles to radiative heat transfer between different types of surfaces to solve problems	K3
CO311.5	Apply diffusive and convective mass transfer equations and correlations to solve problems for different applications	K3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO311.1	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO311.2	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO311.3	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO311.4	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO311.5	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	

Course Outcome No.312

Subject Code & Name : ME8692 & Finite Element Analysis **Department: MECH** **Year/Sem: III/06**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO312.1	Summarize the basics of finite element formulation.	K2
CO312.2	Apply finite element formulations to solve one dimensional Problems	K3
CO312.3	Apply finite element formulations to solve two dimensional scalar Problems.	K3
CO312.4	Apply finite element method to solve two dimensional Vector problems.	K3
CO312.5	Apply finite element method to solve problems on iso parametric element and dynamic Problems.	K3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO312.1	K2	2	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO312.2	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO312.3	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO312.4	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO312.5	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	

Course Outcome No.313

Subject Code & Name : ME8694 & Hydraulics and Pneumatics **Department: MECH** **Year/Sem: III/06**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO313.1	Explain the Fluid power and operation of different types of pumps.	K2
CO313.2	Summarize the features and functions of Hydraulic motors, actuators and Flow control valves	K2
CO313.3	Explain the different types of Hydraulic circuits and systems	K3
CO313.4	Explain the working of different pneumatic circuits and systems	K4
CO313.5	Summarize the various trouble shooting methods and applications of hydraulic and pneumatic systems.	K3

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO313.1	K2	3	2	1	2	2	1	1	2	2	2	2	3	3	2	1
CO313.2	K2	2	2	1	2	1	1	1	1	2	1	1	3	2	1	1
CO313.3	K3	3	2	1	1	1	1	1	1	2	1	1	3	2	2	2
CO313.4	K4	3	2	2	1	1	1	**1**	1	2	2	2	2	3	1	2
CO313.5	K3	2	2	1	1	1	1	1	2	3	2	1	2	2	1	3

Course Outcome No.314

Subject Code & Name : ME8091 & Automobile Engineering **Department: MECH** **Year/Sem: III/06**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO314.1	recognize the various parts of the automobile and their functions and materials.	K2
CO314.2	discuss the engine auxiliary systems and engine emission control.	K2
CO314.3	distinguish the working of different types of transmission systems.	K2
CO314.4	explain the Steering, Brakes and Suspension Systems.	K2
CO314.5	predict possible alternate sources of energy for IC Engines.	K2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO314.1	**K2**	1	2	-	-	-	1	-	-	-	-	1	-	-	2	-
CO314.2	**K2**	1	2	-	-	-	1	-	-	-	-	1	-	-	2	-
CO314.3	**K2**	1	2	-	-	-	1	-	-	-	-	1	-	-	2	-
CO314.4	**K2**	1	2	-	-	-	1	-	-	-	-	1	-	-	2	-
CO314.5	**K2**	1	2	-	-	-	1	-	-	-	-	1	-	-	2	-

Course Outcome No.315

Subject Code & Name : ME8681 & CAD/CAM Laboratory **Department: MECH** **Year/Sem: III/06**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO315.1	Follow the drawing standards, Fits and tolerence.	K3
CO315.2	Re-create part drawing, Sectional views and assembly drawing as per the standard	K3
CO315.3	Exhibit ethical principles in engineering practices	A3
CO315.4	Perform task as an individual and / or team member to manage the task in time	A3
CO315.5	Express the Engineering activities with effective presentation and report.	A3
CO315.6	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO315.1	**K3**	1	2	3	-	3	-	-	3	-	-	-	-	-	2	-
CO315.2	**K3**	1	2	3	-	3	-	-	3	-	-	-	-	-	2	-
CO315.3	**A3**	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-
CO315.4	**A3**	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
CO315.5	**A3**	-	-	-	-	-	-	-	-	3	-	3	-	-	-	-
CO315.6	**A2**	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-

Course Outcome No.316

Subject Code & Name : ME8682 & Design and Fabrication Project **Department: MECH** **Year/Sem: III/06**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO316.1	Design and Fabricate the machine element or the mechanical product.	K3
CO316.2	Demonstrate the working model of the machine element or the mechanical product.	K3
CO316.6	Exhibit ethical principles in engineering practices	A3
CO316.7	Perform task as an individual and / or team member to manage the task in time	A3
CO316.8	Express the Engineering activities with effective presentation and report.	A3
CO316.9	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO316.1	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO316.2	K3	3	2	2	----	----	----	----	----	----	----	----	----	3	----	
CO316.6	A3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-
CO316.7	A3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
CO316.8	A3	-	-	-	-	-	-	-	-	3	-	3	-	-	-	-
CO316.9	A2	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-

Course Outcome No.317

Subject Code & Name : HS8581 & Professional Communication **Department: MECH** **Year/Sem: III/06**

After successful completion of the course, the students should be able to

Course Outcome No.	Course Outcome	Highest Cognitive Level
CO317.1	Summarize various skills such as Soft Skills, Hard skills, employability and career Skills	K2
CO317.2	Involve oneself before the audience by doing effective presentations on introducing oneself, answering questions and visual presentations.	K2
CO317.3	Demonstrate oneself by participating in group discussions, brainstorming sessions and question sessions. Develop activities to improve GD Skills.	K2
CO317.4	Fosters interview skills so as to be successful in them.	K2
CO317.5	Promotes adequate Soft Skills required for the workplace and long-term career.	K2
CO317.6	Exhibit ethical principles in engineering practices	A3
CO317.7	Perform task as an individual and / or team member to manage the task in time	A3
CO317.8	Express the Engineering activities with effective presentation and report.	A3
CO317.9	Interpret the findings with appropriate technological / research citation.	A2

CO & PO and PSO Mapping

Course No.	Level of CO	Program Outcomes												Program Specific Outcomes		
		K3	K4	K4	K5	K3,K5,K6	A3	A2	A3	A3	A3	A3	A2	PSO-1	PSO-2	PSO-3
		PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12			
CO317.1	K2	-	-	-	-	-	-	-	-	-	5	-	-	-	-	1
CO317.2	K2	-	-	-	-	-	-	-	-	-	5	-	-	-	-	0
CO317.3	K2	-	-	-	-	-	-	-	-	-	5	-	-	-	-	1
CO317.4	K2	-	-	-	-	-	-	-	-	-	5	-	-	-	-	1
CO317.5	K2	-	-	-	-	-	-	-	-	-	5	-	-	-	-	1
CO317.6	A3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-
CO317.7	A3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
CO317.8	A3	-	-	-	-	-	-	-	-	3	-	3	-	-	-	-
CO317.9	A2	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-