Course Outcome of the Courses of B.Tech. 3rd Semester and Mapping of the Course Outcome with Programme Outcome

Sl. No.	Sub-Code	Subject	Hours per Week			Credit	Marks	
			L	T	P	C	CE	ESE
Theory								
1	MA181301A	Mathematics III-A (for branches other than CSE and ECE/ETE)	2	1	0	3	30	70
2	EE181302	Electrical Technology	3	0	2	4	30	70
3	ME181303	Basic Thermodynamics	3	0	2	4	30	70
4	ME181304	Theory of Machines	3	0	0	3	30	70
5	ME181305	Machine and Assembly Drawing	2	0	2	3	30	70
6	MC181306	Constitution of India	2	0	0	0 (PP/NP)	-	100
Practical								
1	ME181314	Theory of Machines Lab	0	0	2	1	15	35
2	SI181321	Internship-I (SAI - Social)	0	0	0	1	-	100
TOTAL			15	1	8	**19**	**165**	**585**
Total Contact Hours per week: 24								
Total Credits: 19								

N.B. MC181306 is a Mandatory Audit Course (No Credit). It will be evaluated as PP (Pass) or NP (Not Pass)

ELECTRICAL TECHNOLOGY [EE181302]

Course Outcome (COs): At the end of the course, the student will be able to

CO1	**Illustrate** the constructional details and **analyze** the performance of DCmachine.
CO2	**Explain** and **compute** the performance of single-phase transformer
CO3	**Explain** and **compute** the performance of 3 phase induction motors
CO4	**Explain** the operation of synchronous machines under different loading conditions.
CO5	**Explain** the working principle of watt meter and energy meter and **identify** their errors.

MAPPING of COs with POs

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

BASIC THERMODYNAMICS [ME181303]

A **Course Outcome (COs): At the end of the course, the student will be able to**

CO1	Apply the 1st laws of thermodynamics to **compute** heat and work transfers, internal energy, enthalpy, flow work, and thermal efficiency of closed and steady flow open systems and **develop** energy balance equation.
CO2	Apply the 2nd laws of thermodynamics to **compute** maximum efficiency of reversible engine, COP, entropy transfer, entropy of system and universe, and entropy generation in thermodynamics processes and systems.
CO3	**Employ** steam table and Mollier diagrams to **estimate** heat and work transfers, volume, enthalpy, entropy, internal energy of wet, dry and superheated steams for given value of pressure and temperature.
CO4	**Compute** theoretical efficiency, mean effective pressure, and work output of the Otto cycle, Diesel cycle and Dual cycle.
CO5	**Determine** the amount of air required for the combustion of solid, liquid and gaseous of fuels for the given composition of the fuel, percentage of excess air supply and the amount of combustion gases produced.

MAPPING of COs with Pos

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

THEORY OF MACHINES [ME181304]

Course Outcome (COs): At the end of the course, the student will be able to

CO1	**Analyze** the kinematic of Simple Slider crank, four bar, and straight-line steering mechanism and their inversion.
CO2	**Explain** the working principle and analyze the performance of governor.
CO3	Draw the cam profile and **evaluate** the velocity and acceleration from displacement diagram.
CO4	**Analyze** the motion and dynamic forces acting on mechanical motion transmitting element composed of gears, gear trains and friction drives.
CO5	**Construct** and **Analyze** the TM diagram of flywheel.

MAPPING of COs with POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12
CO1	3	3	1	1	-	-	-	1	1	-	-	1
CO2	3	3	-	-	-	-	-	1	1	-	-	1
CO3	3	2	-	-	-	-	-	1	1	-	-	1
CO4	3	3	-	1	-	-	-	1	1	-	-	1
CO5	3	3	-	1	-	-	-	1	1	-	-	1

MACHINE AND ASSEMBLY DRAWING [ME181305]

Course Outcome (COs): At the end of the course, the student will be able to

CO1	Illustrate and draw the profiles of thread and locking devices such as nuts and bolts.
CO2	Sketch various temporary joints – key, cotter and pin joints, coupling and pipe joints.
CO3	Sketch various permanent joint - riveted joints, welded joints.
CO4	Assemble drawing of engine parts and valves.
CO5	Develop solid models of various machine elements in CAD

MAPPING of COs with Pos

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	-	-	-	-	-	1	1	-	-	1
CO2	2	1	-	-	-	-	--	1	1	-	--	1
CO3	2	1	-	-	-	-	-	1	1	-	-	1
CO4	2	2	-	-	-	-	-	1	1	-	-	1
CO5	2	2	-	-	2	-	-	1	1	-	-	1

THEORY OF MACHINES LAB [ME181314]

Course Outcome (COs): At the end of the course, the student will be able to

CO1	Compare analytical results with observed results of slider crank mechanism.
CO2	CO2: Determine the stability characteristics of governor for appropriate selection in future engineering applications
CO3	CO3: Apply the concept of dynamometer for power measurement.
CO4	CO4: Identify appropriate cam for engineering applications.

MAPPING of COs with Pos

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	-	-	-	1	-	1	2	-	-	1
CO2	3	1	-	-	-	1	-	1	2	-	-	1
CO3	3	1	-	-	-	1	-	1	2	-	-	1
CO4	3	1	-	-	-	1	-	1	2	-	-	1

INTERNSHIP-I (SAI - SOCIAL) [SI181321]

Course Outcome (COs): At the end of the course, the student will be able to

CO1	Demonstrate Ethical and Professional Behavior
CO2	Demonstrate ability to work with Individuals, Families, Groups, Organizations, and Communities
CO3	Identify social problems, their cause and investigate probable solutions.

MAPPING of COs with Pos

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	-	-	-	3	1	1	3	2	1	3
CO2	3	2	-	-	-	3	1	1	3	2	1	3
CO3	3	2	-	-	-	3	1	1	3	2	1	3