Subject: MANAGEMENT AND ENTREPRENEURSHIP	**Subject Code: 15AE51**
Course Outcomes	
CO1	Understand the basic concepts of management, planning, organizing and staffing.
CO2	Acquire the knowledge to become entrepreneur.
CO3	Comprehend the requirements towards the small-scale industries and project preparation.

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2	2	3	-	-	-	-	-	-	-	2	-			
CO2	2	2	3	-	-	-	-	-	-	-	2	-			
CO3	2	2	3	-	-	-	-	-	-	-	2	-			
Average	2	2	3	-	-	-	-	-	-	-	2	-			

Subject: INTRODUCTION TO COMPOSITE MATERIALS	**Subject Code: 15AE52**
Course Outcomes	
CO1	Understand the advantages of composite materials compared to conventional materials
CO2	Evaluate the properties of polymer matrix composites with fiber reinforcements
CO3	Explain the manufacturing process and applications of composite materials

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	-	2	2	-	-	-	1	-	-	1			
CO2	3	3	-	2	2	-	-	-	1	-	-	1			
CO3	3	3	-	2	2	-	-	-	1	-	-	1			
Average	3	3	-	2	2	-	-	-	1	-	-	1			

Subject: HEAT AND MASS TRANSFER	**Subject Code: 15AE53**
Course Outcomes	
CO1	Understand the different modes of heat transfer.
CO2	Understand the free convection and forced convection.
CO3	Acquire the knowledge of heat transfer problems in combustion chambers.

CO-PO-PSO Mapping

COs	**POs**	**PSOs**

Principal
SHREE DEVI INSTITUTE OF TECHNOLOGY
MANGALORE

	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2	2	3	-	2	-	-	-	-	-	-	-			
CO2	2	2	3	-	2	-	-	-	-	-	-	-			
CO3	2	2	3	-	2	-	-	-	-	-	-	-			
Average	2	2	3	-	2	-	-	-	-	-	-	-			

Subject: 15AE54							**Subject Code: 15AE54**								
Course Outcomes															
CO1	Comprehend the basic concepts of stress and strain.														
CO2	Acquire the knowledge of types of loads on aerospace vehicles.														
CO3	Understand the theory of elasticity.														
CO-PO-PSO Mapping															
COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2	2	-	2	1	-	-	-	-	-	-	1			
CO2	2	2	-	2	1	-	-	-	-	-	-	1			
CO3	2	2	-	2	1	-	-	-	-	-	-	1			
Average	2	2	-	2	1	-	-	-	-	-	-	1			

Subject: THEORY OF VIBRATIONS							**Subject Code: 15AE553**								
Course Outcomes															
CO1	Understand the basic concepts of vibrations.														
CO2	Understand the working principle of vibration measuring instruments.														
CO3	Acquire the knowledge of numerical methods for multi-degree freedom systems.														
CO-PO-PSO Mapping															
COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	-	2	2	-	-	-	1	-	-	1			
CO2	3	3	-	2	2	-	-	-	1	-	-	1			
CO3	3	3	-	2	2	-	-	-	1	-	-	1			
Average	3	3	-	2	2	-	-	-	1	-	-	1			

Subject: AIRCRAFT TRANSPORTATION SYSTEMS													**Subject Code: 15AE563**		
Course Outcomes															
CO1	Understand the air transport systems.														
CO2	Acquire the knowledge of aircraft characteristics, airlines and airport.														
CO3	Understand the navigation and environmental systems.														
CO-PO-PSO Mapping															
COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2	2	3	-	2	-	-	-	-	-	-	-			
CO2	2	2	3	-	2	-	-	-	-	-	-	-			

Principal
SHREE DEVI INSTITUTE OF TECHNOLOGY
MANGALORE

CO3	2	2	3	-	2	-	-	-	-	-	-	-			
Average	2	2	3	-	2	-	-	-	-	-	-	-			

Subject: AERODYNAMICS LAB												**Subject Code: 15AEL57**			
Course Outcomes															
CO1	Be acquainted with basic principles of aerodynamics using wind tunnel.														
CO2	Acquire the knowledge on flow visualization techniques.														
CO3	Understand the procedures used for calculating the lift and drag.														
CO-PO-PSO Mapping															
COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2	2	3	1	-	-	-	-	-	-	-	-			
CO2	2	2	3	1	-	-	-	-	-	-	-	-			
CO3	2	2	3	1	-	-	-	-	-	-	-	-			
Average	2	2	3	1	-	-	-	-	-	-	-	-			

Subject: ENERGY CONVERSION & FLUID MECHANICS LAB												**Subject Code: 15AEL58**			
Course Outcomes															
CO1	Familiarize with the flash point, fire point and viscosity of lubricating oils.														
CO2	Study IC engine parts, opening and closing of valves to draw the valve-timing diagram.														
CO3	Gain the knowledge of various flow meters and the concept of fluid mechanics.														
CO4	Understand the Bernoulli's Theorem.														
CO-PO-PSO Mapping															
COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	-	2	2	-	-	-	1	-	-	1			
CO2	3	3	-	2	2	-	-	-	1	-	-	1			
CO3	3	3	-	2	2	-	-	-	1	-	-	1			
CO4	3	3	-	2	2	-	-	-	1	-	-	1			
Average	3	3	-	2	2	-	-	-	1	-	-	1			

Subject: AERODYNAMICS-II												**Subject Code: 15AE61**			
Course Outcomes															
CO1	Understand the concepts of compressible flow and shock phenomenon														
CO2	Acquire the knowledge of oblique shock and expansion wave formation.														
CO3	Appreciate the measurement in high-speed flow.														
CO-PO-PSO Mapping															
COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	-	2	2	-	-	-	1	-	-	1			

Principal
SHREE DEVI INSTITUTE OF TECHNOLOGY
MANGALORE

CO2	3	3	-	2	2	-	-	-	1	-	-	1			
CO3	3	3	-	2	2	-	-	-	1	-	-	1			
Average	3	3	-	2	2	-	-	-	1	-	-	1			

Subject: GAS TURBINE TECHNOLOGY							**Subject Code: 15AE62**								
Course Outcomes															
CO1	Comprehend the types of engines and its applications.														
CO2	Understand the materials required for engine manufacturing.														
CO3	Acquire the knowledge of engine performance and testing.														
CO-PO-PSO Mapping															
COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2	2	3	1	-	-	-	-	-	-	-	-			
CO2	2	2	3	1	-	-	-	-	-	-	-	-			
CO3	2	2	3	1	-	-	-	-	-	-	-	-			
Average	2	2	3	1	-	-	-	-	-	-	-	-			

Subject: AIRCRAFT PERFORMANCE							**Subject Code: 15AE63**								
Course Outcomes															
CO1	Understand the aircraft performance in steady unaccelerated and accelerated flight.														
CO2	Understand the airplane performance parameters.														
CO3	Acquire the knowledge on aircraft maneuver performance.														
CO-PO-PSO Mapping															
COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	-	2	2	-	-	-	1	-	-	1			
CO2	3	3	-	2	2	-	-	-	1	-	-	1			
CO3	3	3	-	2	2	-	-	-	1	-	-	1			
Average	3	3	-	2	2	-	-	-	1	-	-	1			

Subject: EXPERIMENTAL STRESS ANALYSIS							**Subject Code: 15AE654**								
Course Outcomes															
CO1	Understand the basics of measurements.														
CO2	Study about the electrical resistance strain gauges.														
CO3	Acquire the knowledge of NDT.														
CO-PO-PSO Mapping															
COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2	2	3	1	-	-	-	-	-	-	-	-			
CO2	2	2	3	1	-	-	-	-	-	-	-	-			
CO3	2	2	3	1	-	-	-	-	-	-	-	-			
Average	2	2	3	1	-	-	-	-	-	-	-	-			

Principal
SHREE DEVI INSTITUTE OF TECHNOLOGY
MANGALORE

Subject: MAINTENANCE, OVERHAUL & REPAIR OF AIRCRAFT SYSTEMS	**Subject Code: 15AE664**
Course Outcomes	
CO1	Comprehend the fundamentals of maintenance and certification.
CO2	Acquire the knowledge of documentation for maintenance.
CO3	Understand the Aircraft Maintenance, safety and trouble shooting.

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	-	2	2	-	-	-	1	-	-	1			
CO2	3	3	-	2	2	-	-	-	1	-	-	1			
CO3	3	3	-	2	2	-	-	-	1	-	-	1			
Average	3	3	-	2	2	-	-	-	1	-	-	1			

Subject: AIRCRAFT STRUCTURES LAB	**Subject Code: 15AEL66**
Course Outcomes	
CO1	Learn about the simply supported beam, cantilever beam.
CO2	Understand the Maxwell's theorem and Poisson ration.
CO3	Acquire the knowledge about buckling load, shear failure and shear center.

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2	2	3	1	-	-	-	-	-	-	-	-			
CO2	2	2	3	1	-	-	-	-	-	-	-	-			
CO3	2	2	3	1	-	-	-	-	-	-	-	-			
Average	2	2	3	1	-	-	-	-	-	-	-	-			

Subject: AIRCRAFT PROPULSION LAB	**Subject Code: 15AEL67**
Course Outcomes	
CO1	Understand how to do the heat transfer
CO2	Comprehend the cascade testing of axial compressor and axial turbine blade row.
CO3	Study the performance of propeller and jet engines.

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	3	3	-	2	2	-	-	-	1	-	-	1			
CO2	3	3	-	2	2	-	-	-	1	-	-	1			
CO3	3	3	-	2	2	-	-	-	1	-	-	1			
Average	3	3	-	2	2	-	-	-	1	-	-	1			

Principal
SHREE DEVI INSTITUTE OF TECHNOLOGY
MANGALORE

Subject: Project Work Phase - 1	**Subject Code:** 15AEP68

Course Outcomes

CO1	Identify and interpret the realistic mechanical engineering problems and related systems.
CO2	Apply the basic principles and concepts of mechanical engineering in real world systems based on professional ethics and responsibilities.
CO3	Criticize and experiment to achieve optimum solutions for mechanical engineering problems.
CO4	Analyze, evaluate and review the obtained solution for problems in mechanical engineering systems.
CO5	Demonstrate professionalism with ethics; present effective communication skills and relate engineering issues to broader societal context.

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	1	2	3
CO1	3				1	2	2	-	3	3	1	2			
CO2	3	1			2	1	-	1	3	3	1	3			
CO3	3	2	2	2	2	2	1		3	3	1	2			
CO4	3	2	2	2	2	2	1		3	3	1	2			
CO5						1		3	3	3		1			
Average	2.5	2.33	2.33	2	1.75	2	2	2.5	3	3	1.6	2.6			

Subject: CONTROL ENGINEERING	**Subject Code:** 15AE71

Course Outcomes

CO1	Apply the concepts of control systems.
CO2	Reduce the block diagrams and signal flow graphs.
CO3	Determine the frequency response analysis by using various types of plots.

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	1	2	3
CO1	2	2	3	-	-	-	-	-	-	-	2	-			
CO2	2	2	3	-	-	-	-	-	-	-	2	-			
CO3	2	2	3	-	-	-	-	-	-	-	2	-			
Average	2	2	3	-	-	-	-	-	-	-	2	-			

Subject: COMPUTATIONAL FLUID DYNAMICS	**Subject Code:** 15AE72

Course Outcomes

CO1	Differentiate the FDM, FVM and FEM
CO2	Perform the flow, structural and thermal analysis.
CO3	Utilize the discretization methods according to the application.

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	1	2	3
CO1	3	3	-	2	2	-	-	-	1	-	-	1			
CO2	3	3	-	2	2	-	-	-	1	-	-	1			

Principal
SHREE DEVI INSTITUTE OF TECHNOLOGY
MANGALORE

CO3	3	3	-	2	2	-	-	-	1	-	-	1			
Average	3	3	-	2	2	-	-	-	1	-	-	1			

Subject: AIRCRAFT STABILITY AND CONTROL								**Subject Code:** 15AE73						
Course Outcomes														
CO1	Apply the basic concepts of aircraft stability and control.													
CO2	Differentiate the static longitudinal and static directional stability													
CO3	Estimate the dynamic derivatives.													
CO-PO-PSO Mapping														
COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	1	2	3
CO1	2	2	3	-	2	-	-	-	-	-	-	-			
CO2	2	2	3	-	2	-	-	-	-	-	-	-			
CO3	2	2	3	-	2	-	-	-	-	-	-	-			
Average	2	2	3	-	2	-	-	-	-	-	-	-			

Subject: HELICOPTER DYNAMICS								**Subject Code:** 15AE743						
Course Outcomes														
CO1	Apply the basic concepts of helicopter dynamics.													
CO2	Compute the critical speed by using various methods.													
CO3	Distinguish the turborotor system stability by using transfer matrix and finite element formulation.													
CO-PO-PSO Mapping														
COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	1	2	3
CO1	2	2	-	2	1	-	-	2	2	-	-	1			
CO2	2	2	-	2	1	-	-	2	2	-	-	1			
CO3	2	2	-	2	1	-	-	2	2	-	-	1			
Average	2	2	-	2	1	-	-	2	2	-	-	1			

Subject: FLIGHT SIMULATION LAB								**Subject Code:** 15AEL76						
Course Outcomes														
CO1	Plot the root locus and bode plot													
CO2	Calculate the dynamics response of aircraft.													
CO3	Use computational tools to model aircraft trajectory													
CO-PO-PSO Mapping														
COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	1	2	3
CO1	2	2	3	1	-	-	-	-	-	-	-	-			
CO2	2	2	3	1	-	-	-	-	-	-	-	-			
CO3	2	2	3	1	-	-	-	-	-	-	-	-			

Principal
SHREE DEVI INSTITUTE OF TECHNOLOGY
MANGALORE

Average	2	2	3	1	-	-	-	-	-	-	-	-			

Subject: MODELING & ANALYSIS LAB												**Subject Code:** 15AEL77		
Course Outcomes														
CO1	Draw the geometric models of symmetric, cambered aero foil, nozzle, wing and other structures.													
CO2	Apply different types of meshing.													
CO3	Perform the flow and stress analysis.													
CO-PO-PSO Mapping														
COs	**POs**												**PSOs**	
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	1	2	3
CO1	2	2	3	1	-	-	-	-	-	-	-	-			
CO2	2	2	3	1	-	-	-	-	-	-	-	-			
CO3	2	2	3	1	-	-	-	-	-	-	-	-			
Average	2	2	3	1	-	-	-	-	-	-	-	-			

Subject: Project Work Phase - 1												**Subject Code:** 15AEP78		
Course Outcomes														
CO1	Identify and interpret the realistic mechanical engineering problems and related systems.													
CO2	Apply the basic principles and concepts of mechanical engineering in real world systems based on professional ethics and responsibilities.													
CO3	Criticize and experiment to achieve optimum solutions for mechanical engineering problems.													
CO4	Analyze, evaluate and review the obtained solution for problems in mechanical engineering systems.													
CO5	Demonstrate professionalism with ethics; present effective communication skills and relate engineering issues to broader societal context.													
CO-PO-PSO Mapping														
COs	**POs**												**PSOs**	
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	1	2	3
CO1	3				1	2	2	-	3	3	1	2			
CO2	3	1			2	1	-	1	3	3	1	3			
CO3	3	2	2	2	2	2	1		3	3	1	2			
CO4	3	2	2	2	2	2	1		3	3	1	2			
CO5						1		3	3	3		1			
Average	2.5	2.33	2.33	2	1.75	2	2	2.5	3	3	1.6	2.6			

Subject: FLIGHT TESTING	**Subject Code:** 15AE831
Course Outcomes	
CO1	Measure the flight parameters.
CO2	Estimate the performance of flight.

Principal
SHREE DEVI INSTITUTE OF TECHNOLOGY
MANGALORE

CO3	Apply the FAR regulations.

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2	1	-	-	-	-	-	-	-	-	-	1			
CO2	2	1	-	-	-	-	-	-	-	-	-	1			
CO3	2	1	-	-	-	-	-	-	-	-	-	1			
Average	2	1	-	-	-	-	-	-	-	-	-	1			

Subject: AVIONICS	**Subject Code:** 15AE81

Course Outcomes

CO1	Select the suitable data bus based on the application.
CO2	Identify the suitable navigation systems.
CO3	Distinguish the avionics system architecture.

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	1	2	3
CO1	2	1	-	-	-	-	-	-	-	-	-	1			
CO2	2	1	-	-	-	-	-	-	-	-	-	1			
CO3	2	1	-	-	-	-	-	-	-	-	-	1			
Average	2	1	-	-	-	-	-	-	-	-	-	1			

Subject: Project Phase – II	**Subject Code: 15AEP83**

Course Outcomes

CO1	Identify and interpret the realistic mechanical engineering problems and related systems.
CO2	Apply the basic principles and concepts of mechanical engineering in real world systems based on professional ethics and responsibilities.
CO3	Criticize and experiment to achieve optimum solutions for mechanical engineering problems.
CO4	Analyze, evaluate and review the obtained solution for problems in mechanical engineering systems.
CO5	Demonstrate professionalism with ethics; present effective communication skills and relate engineering issues to broader societal context.

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	1	2	3
CO1	3				1	2	2	-	3	3	1	2			
CO2	3	1			2	1	-	1	3	3	1	3			
CO3	3	2	2	2	2	2	1		3	3	1	2			
CO4	3	2	2	2	2	2	1		3	3	1	2			
CO5						1		3	3	3		1			
Average	2.5	2.33	2.33	2	1.75	2	2	2.5	3	3	1.6	2.6			

Principal
SHREE DEVI INSTITUTE OF TECHNOLOGY
MANGALORE

Subject: Seminar	**Subject Code: 15AES84**

Course Outcomes	
CO1	Identify recent technical topics from interested domains
CO2	Acquire basic skills for performing literature survey.
CO3	Improve their Presentation and Communication skills.
CO4	Develop skills for preparing technical report

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	2	2	3	1	-	-	-	-	-	-	-	2			
CO2	2	2	3	1	-	-	-	-	-	-	-	2			
CO3	2	2	3	1	-	-	-	-	-	-	-	2			
CO4	2	2	3	1								1			
Average	2	2	3	1	-	-	-	-	-	-	-	1.8			

Subject: FLIGHT VEHICLE DESIGN	**Subject Code:** 15AE82

Course Outcomes	
CO1	Calculate the thrust to weight ratio and wing loading.
CO2	Compute the flight vehicle performance.
CO3	Select the subsystems as per vehicle design.

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	1	2	3
CO1	3	2	2	2	2	-	-	-	-	-	-	2			
CO2	3	2	2	2	2	-	-	-	-	-	-	2			
CO3	3	2	2	2	2	-	-	-	-	-	-	2			
Average	3	2	2	2	2	-	-	-	-	-	-	2			

Subject: Internship	**Subject Code: 15AEI85**

Course Outcomes	
CO1	Conduct experiments to evaluate the design characteristics of various machine elements subjected to various loading.
CO2	Analyse the theoretical and experimental concept in machine elements subjected to various loading.
CO3	Understand and discuss the design characteristics of various systems subjected to mechanical loading.

CO-PO-PSO Mapping

COs	**POs**												**PSOs**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	1	2	3
CO1	2	2	3	1	-	-	-	-	-	-	-	2			
CO2	2	2	3	1	-	-	-	-	-	-	-	2			
CO3	2	2	3	1	-	-	-	-	-	-	-	2			
Average	2	2	3	1	-	-	-	-	-	-	-	2			

Principal
SHREE DEVI INSTITUTE OF TECHNOLOGY
MANGALORE