SHREE DEVI INSTITUTE OF TECHNOLOGY

Airport Road, Kenjar, Mangalore-574142
Affiliated to Visvesvaraya Technological University, Belagavi.
Approved by AICTE, New Delhi.

Department of Aeronautical Engineering

Course Outcomes and CO-PO-PSO articulation Matrix

III / IV - Semester

Subject: TRANSFORM CALCULUS, FOURIER SERIES AND NUMERICAL TECHNIQUES	**Subject Code:** 17MAT31

Course Outcomes

CO1	Use Laplace transform and inverse Laplace transform in solving differential/ integral equation arising in network analysis, control systems and other fields of engineering.
CO2	Demonstrate Fourier series to study the behavior of periodic functions and their applications in system communications, digital signal processing and field theory.
CO3	Make use of Fourier transform and Z-transform to illustrate discrete/continuous function arising in wave and heat propagation, signals and systems.
CO4	Solve first and second order ordinary differential equations arising in engineering problems using single step and multistep numerical methods.
CO5	Determine the externals of functionals using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis.

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	-	3	3	-	-	-	-	-	-	2			
CO2	3	3	-	3	3	-	-	-	-	-	-	2			
CO3	3	3	-	3	3	-	-	-	-	-	-	2			
CO4	3	3	-	3	3	-	-	-	-	-	-	2			
CO5	3	3	-	3	3	-	-	-	-	-	-	2			
Average	3	3	-	3	3	-	-	-	-	-	-	2			

Subject: AERO THERMODYNAMICS	**Subject Code:** 17AE32

Course Outcomes

CO1	Apply the concepts and definitions of thermodynamics.
CO2	Differentiate thermodynamic work and heat and apply I law and II law of thermodynamics to different process.
CO3	Apply the principles of various gas cycles.

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

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Subject: MECHANICS OF MATERIALS							**Subject Code:** 17AE33							
Course Outcomes														
CO1	Apply the basic concepts of strength of materials.													
CO2	Compute stress, strain under different loadings													
CO3	Distinguish the properties of different 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	3	3	3	-	-	-	-	-	-	2			
CO2	3	3	3	3	3	-	-	-	-	-	-	2			
CO3	3	3	3	3	3	-	-	-	-	-	-	2			
Average	3	3	3	3	3	-	-	-	-	-	-	2			

Subject: ELEMENTS OF AERONAUTICS							**Subject Code:** 17AE34							
Course Outcomes														
CO1	Appreciate and apply the basic principle of aviation.													
CO2	Apply the concepts of fundaments of flight, basics of aircraft structures, aircraft propulsion and aircraft materials during the development of an aircraft.													
CO3	Comprehend the complexities involved during development of flight vehicles.													
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	3	3	3	-	-	-	-	-	-	2			
CO2	3	3	3	3	3	-	-	-	-	-	-	2			
CO3	3	3	3	3	3	-	-	-	-	-	-	2			
Average	3	3	3	3	3	-	-	-	-	-	-	2			

Subject: Mechanics of Fluids							**Subject Code:** 17AE35							
Course Outcomes														
CO1	Evaluate the effect of fluid properties.													
CO2	Apply the governing laws of fluid flow													
CO3	Classify different types of fluid flows.													
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	-	3	3	-	-	-	-	-	-	1			
CO2	3	3	-	3	3	-	-	-	-	-	-	1			
CO3	3	3	-	3	3	-	-	-	-	-	-	1			
Average	3	3	-	3	3	-	-	-	-	-	-	1			

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Subject: Measurement and Metrology												**Subject Code:** 17AE36			
Course Outcomes															
CO1	Apply the standards of measurement, system of limits, fits, tolerances and gauging.														
CO2	Identify and use appropriate measuring instruments.														
CO3	Acquire the knowledge on measurement and measurement 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	3	3	-	-	-	-	-		1			
CO2	3	3	2	3	3	-	-	-	-	-		1			
CO3	3	3	2	3	3	-	-	-	-	-		1			
Average	3	3	2	3	3	-	-	-	-	-		1			

Subject: MEASUREMENTS AND METROLOGY LAB												**Subject Code:** 17AEL37A			
Course Outcomes															
CO1	Identify and classify different measuring tools related to experiments.														
CO2	Identify, define, and explain accuracy, precision, and some additional terminology.														
CO3	Conduct, Analyze, interpret, and present measurement data from measurements experiments.														
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	3	3	2	-	-	-	-	-	2				
CO2	3	3	3	3	2	-	-	-	-	-	2				
CO3	3	3	3	3	2	-	-	-	-	-	2				
Average	3	3	3	3	2	-	-	-	-	-	2				

Subject: MACHINE SHOP LAB												**Subject Code:** 17AEL38			
Course Outcomes															
CO1	Demonstrate the operation of general-purpose machine tools and manufacturing process.														
CO2	Identify the special purpose machine tools for specific requirements														
CO3	Develop physical models using different manufacturing processes.														
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	3	3	3	-	-	-	-	-					
CO2	3	3	3	3	3	-	-	-	-	-					
CO3	3	3	3	3	3	-	-	-	-	-					
Average	3	3	3	3	3	-	-	-	-	-					

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Subject: CONSTITUTION OF INDIA, PROFESSIONAL ETHICS AND CYBER LAW (CPC)	**Subject Code:** 17CPC39

Course Outcomes

CO1	Have constitutional knowledge and legal literacy.
CO2	Understand Engineering and Professional ethics and responsibilities of Engineers.
CO3	Understand the the cybercrimes and cyber laws for cyber safety measures.

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

Subject: COMPLEX ANALYSIS, PROBABILITY AND STATISTICAL METHODS	**Subject Code:** 17MAT41

Course Outcomes

CO1	Use the concepts of analytic function and complex potentials to solve the problems arising in electromagnetic field theory.
CO2	Utilize conformal transformation and complex integral arising in aero foil theory, fluid flow visualization and image processing.
CO3	Apply discrete and continuous probability distributions in analyzing the probability models arising in engineering field.
CO4	Make use of the correlation and regression analysis to fit a suitable mathematical model for the statistical data.
CO5	Construct joint probability distributions and demonstrate the validity of testing the hypothesis.

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	-	3	3	-	-	-	-	-	-					
CO2	3	3	-	3	3	-	-	-	-	-	-					
CO3	3	3	-	3	3	-	-	-	-	-	-					
CO4	3	3	-	3	3	-	-	-	-	-	-					
CO5	3	3	-	3	3	-	-	-	-	-	-					
Average	3	3	-	3	3	-	-	-	-	-	-					

Subject: AERODYNAMICS-I	**Subject Code:** 17AE42

Course Outcomes

CO1	Evaluate typical airfoil characteristics and two-dimensional flows over airfoil
CO2	Compute and analyze the incompressible flow over finite wings
CO3	Apply finite wing theory and design high lift systems from the aerodynamics view point

CO-PO-PSO Mapping

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

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CO1	3	3	3	3	3	-	-	-		-	3				
CO2	3	3	3	3	3	-	-	-		-	3				
CO3	3	3	3	3	3	-	-	-		-	3				
Average	3	3	3	3	3	-	-	-		-	3				

Subject: Aircraft Propulsion									**Subject Code:** 17AE43						
Course Outcomes															
CO1	Apply the basic principle and theory of aircraft propulsion.														
CO2	Explain the functions of centrifugal, axial compressors, axial and radial turbines														
CO3	Analyse the performance of nozzles & inlets and combustion chamber.														
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	3	3	3	-	2	-	3	-					
CO2	3	3	3	3	3	-	2	-	3	-					
CO3	3	3	3	3	3	-	2	-	3	-					
Average	3	3	3	3	3	-	2	-	3	-					

Subject: MECHANISMS AND MACHINE THEORY										**Subject Code:** 17AE44					
Course Outcomes															
CO1	Apply the theory of velocity, acceleration and static force analysis to design of mechanisms.														
CO2	Design spur gears, gear train, balancing of rotating and reciprocating masses.														
CO3	Apply governors and gyroscope														
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	3	3	3	-	-	-	-	-	-	1			
CO2	3	3	3	3	3	-	-	-	-	-	-	1			
CO3	3	3	3	3	3	-	-	-	-	-	-	1			
Average	3	3	3	3	3	-	-	-	-	-	-	1			

Subject: Aircraft Material Science										**Subject Code:** 17AE45					
Course Outcomes															
CO1	Identify appropriate aircraft materials for a given application.														
CO2	Explain the properties of super alloys, ablative materials and high energy material.														
CO3	Understand material corrosion process and apply prevention technique.														
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	3	3	3	-	-	-		-					
CO2	3	3	3	3	3	-	-	-		-					
CO3	3	3	3	3	3	-	-	-		-					

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Average	3	3	3	3	3	-	-	-		-					

Subject: TURBOMACHINES											**Subject Code:** 17AE46			
Course Outcomes														
CO1	Compute the energy transfer and energy transformation in turbomachines.													
CO2	Analyze the design of turbomachine blades.													
CO3	Apply hydraulic pumps and turbines for specific requirements													
CO-PO-PSO Mapping														
COs	**POs**												**PSOs**	
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	2	3	2	2	3	-	-	-		-		1			
CO2	2	3	2	2	3	-	-	-		-		1			
CO3	2	3	2	2	3	-	-	-		-		1			
Average	2	3	2	2	3	-	-	-		-		1			

Subject: MEASUREMENTS AND METROLOGY LAB											**Subject Code:** 17AEL47B			
Course Outcomes														
CO1	Identify and classify different measuring tools related to experiments.													
CO2	Identify, define, and explain accuracy, resolution, precision, and some additional terminology.													
CO3	Conduct, Analyze, interpret, and present measurement data from measurements experiments.													
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	2	3	-	-	-		-	3				
CO2	2	2	2	2	3	-	-	-		-	3				
CO3	2	2	2	2	3	-	-	-		-	3				
Average	2	2	2	2	3	-	-	-		-	3				

Subject: COMPUTER AIDED AIRCRAFT DRAWING											**Subject Code:** 17AEL48			
Course Outcomes														
CO1	Distinguish drawings of machine and aircraft components													
CO2	Identify assembly drawings either manually or by using standard CAD packages.													
CO3	Practice with standard components and their assembly of an aircraft.													
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	3	3	3	-	-	-	2	-	2	2			
CO2	3	3	3	3	3	-	-	-	2	-	2	2			
CO3	3	3	3	3	3	-	-	-	2	-	2	2			
Average	3	3	3	3	3	-	-	-	2	-	2	2			

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V / VI - Semester

Subject: MANAGEMENT AND ENTREPRENEURSHIP	**Subject Code: 17AE51**
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: 17AE52**
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: 17AE53**
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**		
	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	-	-	-	-	-	-	-			

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Subject: 17AE54													**Subject Code: 17AE54**		
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: 17AE553**		
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: 17AE563**		
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	-	-	-	-	-	-	-			
CO3	2	2	3	-	2	-	-	-	-	-	-	-			
Average	2	2	3	-	2	-	-	-	-	-	-	-			

Subject: AERODYNAMICS LAB	**Subject Code: 17AEL57**
Course Outcomes	
CO1	Be acquainted with basic principles of aerodynamics using wind tunnel.
CO2	Acquire the knowledge on flow visualization techniques.

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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: 17AEL58**

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: 17AE61**

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			
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: 17AE62**

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.

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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: 17AE63**
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: 17AE651**
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	-	-	-	-	-	-	-	-			

Subject: MAINTENANCE, OVERHAUL & REPAIR OF AIRCRAFT SYSTEMS	**Subject Code: 17AE664**
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

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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: 17AEL66**
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: 17AEL67**
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			

Subject: Project Work Phase - 1	**Subject Code:** 17AEP68
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**

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	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			

Semester-VII/VIII

Subject: CONTROL ENGINEERING												**Subject Code:** 17AE71			
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:** 17AE72			
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			
CO3	3	3	-	2	2	-	-	-	1	-	-	1			
Average	3	3	-	2	2	-	-	-	1	-	-	1			

Subject: AIRCRAFT STABILITY AND CONTROL												**Subject Code:** 17AE73			
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

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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:** 17AE743						
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	-	-	-	-	-	-	1			
CO2	2	2	-	2	1	-	-	-	-	-	-	1			
CO3	2	2	-	2	1	-	-	-	-	-	-	1			
Average	2	2	-	2	1	-	-	-	-	-	-	1			

Subject: OPERATIONS RESEARCH								**Subject Code:** 17AE751						
Course Outcomes														
CO1	Apply the basic of operations research.													
CO2	Classify the PERT-CPM techniques, queuing theory and game theory.													
CO3	Identify the sequencing techniques.													
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	-	-	2			
CO2	-	2	-	2	3	-	-	-	2	-	-	2			
CO3	-	2	-	2	3	-	-	-	2	-	-	2			
Average	-	2	-	2	3	-	-	-	2	-	-	2			

Subject: FLIGHT SIMULATION LAB								**Subject Code:** 17AEL76						
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	-	-	-	-	-	-	-	-			
Average	2	2	3	1	-	-	-	-	-	-	-	-			

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Subject: MODELING & ANALYSIS LAB									**Subject Code:** 17AEL77						
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: AVIONICS									**Subject Code:** 17AE81						
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: FLIGHT VEHICLE DESIGN									**Subject Code:** 17AE82						
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			

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Subject: FLIGHT TESTING												**Subject Code:** 17AE831			
Course Outcomes															
CO1	Measure the flight parameters.														
CO2	Estimate the performance of flight.														
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			

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