



### CO-PO JUSTIFICATION

CO No.	PO	CL	Justification
18MAT31.1	PO1	3	Laplace transforms finds very wide applications in various areas of physics, electrical engineering, control engineering, optics, mathematics and signal processing. Students are able to solve the Problems and also understand applications.
	PO2	2	Many engineering problems involve initial value problems which can be solved using Laplace transforms. Students will be able to analyze the problems which arise in physics, electrical engineering, control engineering, optics, and signal processing engg. applications
18MAT31.2	PO1	3	The students demonstrate the knowledge and ability to apply Fourier series for solving boundary and initial value problems of mechanics, heat flow and other field. Students are able to solve the Problems and also understand applications. Hence it is mapped on high scale.
	PO2	2	Many engineering problems involve partial differential equations which are solved by using Fourier series method. Student will be able to analyze the problems which arise in fluid mechanics and other engg. subjects. This Fourier series method helps to solve any complex problems. Hence it is mapped on medium scale.
18MAT31.3	PO1	3	Fourier transforms is used in electrical engineering, found in all varieties of signal processing, from communications and circuit design to imaging and optics. Z- Transforms is used to analyze discrete signal. To find frequency response and for automatic controls in telecommunication and other fields of engineering. Students are able to solve the Problems and also understand applications. Hence it is mapped on high scale
	PO2	2	Many engineering problems involve complex differential equation. It is challenging for students to analyze the problems which arises in electrical engineering and other engg subjects. Hence it is mapped on medium scale.
18MAT31.4	PO1	3	The student demonstrates the knowledge and ability to apply numerical methods for solving equations. Students are able to solve the Problems and also understand applications. Hence it mapped on high scale.
	PO2	2	Many engineering problems involve higher degree equations and students are well versed with finding the solution of the same. Student will be able to analyze the problems which arise in realistic problems. Hence it mapped on medium scale.
18MAT31.5	PO1	3	Students are able to understand mathematics fundamentals necessary to formulate, solve and analyze engineering problems. To solve the problems in dynamics of rigid bodies, optimization of orbits and vibration problems. And also finding maximum and minimum value of the definite integral involving certain functions.
	PO2	2	Students are able to solve the simple problem of the calculus of variations.