Transform Techniques for Engineers

Mathematics

Instructor Name: S.R.Manam
Institute: IIT Madras
Department: Mathematics

Course Intro: : The aim of the course is to teach various transform techniques that are essential for a student of physical sciences and engineering. They include, Fourier series, Fourier transforms, Laplace transform and Z-transforms.

Pre Requisites: : Calculus
Core/Elective: : Core
UG/PG: : UG
Industry Support : Nil

Reference : Will be added later

About Instructor: S.R. Manam is an Associate Professor at Department of Mathematics, IIT Madras and he works on the application of differential and integral equation techniques in wave structure interactions.

COURSE PLAN

SL.NO	Week	Module Name
1	1	Introduction to Fourier series
2	2	Finding Fourier series of a periodic function
3	3	Fourier transforms over real line
4	4	Fourier transform and its properties
5	5	Fourier transform and its applications
6	6	Preliminaries on complex variable techniques
7	7	Introduction to Laplace transform
8	8	Laplace transform and its properties
9	9	Laplace transform and its properties
10	10	Laplace transform and its applications to ODEâ€™s and PDEs
11	11	Z-transforms
12	12	Z-transforms and its properties and applications