

Subject Code: 1SC2040308

Subject Title: Mathematical Methods –I

Course Objective:

The overall objective of this course is to provide an introduction to the process of mathematical methods while giving students an opportunity to develop and construct appropriate various problem situations described in detail in the syllabus.

Teaching scheme (hours) per week		credit		Theory Marks		Practical Marks		Total
Theory	Tutorial	Theory	Tutorial	University Assessment	Cont. Assessment	University Assessment	Cont. Assessment	
4	1	4	1	60	40	-	-	100

Subject Contents			
Unit. No	Topic	Total Hours	Weight (%)
1	Laplace transform- Definition and its properties. Rules of manipulation. Laplace transform of derivatives and integrals.	18	25
2	Properties of inverse Laplace transform. Convolution theorem. Solve Differential equation using Laplace Transforms.	18	25
3	Fourier transform - Definition and properties of Fourier sine, cosine and complex transforms.	18	25
4	Convolution theorem. Inversion theorems. Fourier transform of derivatives, Z-transforms.	18	25

Course Outcome:

On successful completion of the course, students should be able to..

- Students will be able to understand the concept of Laplace Transforms, Inverse Laplace Transform and its application.
- Students will be able to understand the concept of Fourier Transforms and its application.
- Students will be able to understand the concept of Z-transforms and its application.

List of References:

- The Fourier Transforms and its applications, by Ronald Bracewell.
- Schaum's outline of Fourier analysis with applications to Boundary value problems, by Murray Spiegel.
- The Laplace Transform: Theory and applications, by Joel L. Schiff.
- Schaum's outline of Laplace Transforms, by Murray Spiegel.