

# GUJARAT TECHNOLOGICAL UNIVERSITY

## M.E. Power Electronics

### Semester: I

Subject Name: **Mathematics for Researches**

Sr. No.	Course Content
1.	<b>Fourier Series:</b> Review of Fourier series, Complex FS, and Approximation by Trigonometric Polynomials, Use of double Fourier series, Fourier Integrals and Fourier Transforms.
2.	<b>Numerical Methods:</b> Floating point, Round off, Error propagation, Solution of equation by Iteration, Numerical Integration and Differentiation.
3.	<b>Numerical Solutions of Linear Equations :</b> Solution using direct methods .Numerical Solutions for Matrix Inversion. Matrix eigen value problems and methods.
4.	<b>Numerical Solutions of Differential Equations:</b> Initial value & boundary value problems, methods and applications.

#### Reference Books:

1. Advanced Engineering Methods by Erwin Kreyszing.
2. Engineering Mathematics by Bali and Iyenger, Laxmi Pub.
3. Higher Engineering Mathematics by B.S.Grewal.
4. Numerical Methods by S. Pal, Oxford Press.
5. Introductory methods of Numerical analysis by S. S.Sastry , PHI.