Syllabus

- Fourier series,

- Fourier integral,

- Fourier transform and their applications.

- Laplace transform and its properties with their applications in differential and integral equations.

- Harmonic functions:

    - Laplace equation in different coordinates and its applications.

- Concepts of singularities and series solutions;

- Legendre polynomials,

- Hermite polynomials,

- Laguerre functions,

- Bessel function and their properties.

- Boundary value problems involving second order ordinary differential equations;

- eigenfunction, expansions and Green's functions.

- Ideas about Strum-Liouville problems.

- Linear integral equations:

    - Elementary' ideas