Complex functions and derivative, analyticity of function, complex integrals, integration including improper integrals using residues, Taylor and Laurent series, orthogonal functions and Fourier series, Fourier-Legendre series, Fourier-Bessel series, heat, wave and Laplace’s equations, non homogeneous partial differential equations, orthogonal series expansions, higher dimensional partial differential equations, partial differential equations in polar, cylindrical and spherical coordinates, Laplace, Fourier transforms and numerical methods. (Co-requisite: MTH 2212)