Math 285A - 01 - Advanced Topics Applied in Mathematics - Fall 2022

Analysis for Applications

Instructor: Kyle Hambrook (kyle.hambrook@sjsu.edu)
Time: Tuesdays and Thursday at 1:30PM - 2:45PM

This course teaches the fundamentals of analysis needed for applied mathematics. It is designed to complement Math 233A and Math 234. The focus is on examples and building foundational understanding. There are no epsilon-delta proofs.

Topics: Pointwise, Uniform, L1, L2 Convergence; Examples of Banach and Hilbert Spaces; Banach Fixed-Point Theorem; Orthonormal Bases and Fourier Series; Fourier Transform; Delta and Green's Functions; Weak Derivatives; Applications to Differential Equations (Series Solutions, Picard's Existence and Uniqueness Theorem, Eigenfunction Bases, Transform Methods, Green's Functions)

Prerequisite: Math 133B or Math 131A