Math 234B : Topics in Complex Analysis

California State University, Sacramento · Department of Mathematics & Statistics

Sequences, series, infinite products, conformal mapping, Dirichlet's problem, analytic continuation, entire functions, Riemann Zeta function, normal families.

Catalog Description

Continuation of Math 234A with topics selected from: Partial Fractions and Infinite Products, Entire Functions, Riemann Zeta Function, Normal Families, Riemann Mapping Theorem, Conformal Mapping of Polygons, Dirihclet Problem, Analytic Continuation. Note: May be taken twice with approval of the graduate coordinator. **Graded**: Graded Student. **Units**: 3.0.

Prerequisites

Math 234A.

Course Outline

I. Power series

    A. Weierstrass' theorem

    B. Taylor series

    C. Laurent series

II. Entire Function

    A. Jensen's formula

    B. Hadamard's theorem

III. Conformal Mapping of Polygons

    A. Schwarz-Christoffel formula

    B. Mapping on a rectangle

IV. Dirichlet Problem

V. Analytic Continuation

    A. Analytic continuation along arch

    B. Homotopic curves

    C. The Monodromy theorem

    D. Riemann Zeta Function

VI. Families

    A. Equicontinuity

    B. Normality and compactness

    C. Arzela's theorem

    D. Families of analytic functions