Marshall University

College of Science

MTH 360: Introduction to Complex Variables

Course catalog description

An introductory survey of complex numbers, analytic functions, properties of elementary functions, integrals, series, residues and poles, with a focus on practical applications.

Credit hours

3 hours

Prerequisites

A grade of C or higher in MTH 231

Course objectives

- Explore the properties of the complex number system algebraically, geometrically, and topologically.
- Learn functions and mappings in the single variable complex setting.
- Apply and expand knowledge of real variable calculus to complex variables.
- Learn fundamental concepts, such as analyticity, residues, and singularities, which make complex variables a unique branch of mathematics.

Learner outcomes

Students will:

- Demonstrate an ability to interpret and utilize complex numbers algebraically, geometrically, and topologically.
- Demonstrate an ability to apply concepts of real variable calculus to the complex variable setting.
- apply their knowledge of complex functions to create images of important sets and interpret complex functions and their applications

- Apply Residue Theory to find real solutions to real integrals using complex integrals.

Suggested textbook

- Complex Analysis For Mathematics and Engineering, 6th Edition, by John H. Mathews and Russell W. Howell

Last updated

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