



UNIVERSITÀ DEGLI STUDI DELL'AQUILA
CORSI DI INGEGNERIA

A.A. 2018/2019

Complex variables (I4W)
- Sampalmieri Rosella Colomba -

(Aggiornato il 10-10-2018)

Contenuti del corso (abstract del programma):

Complex variable, complex integration, Laplace and Fourier Transform and applications

Programma esteso:

Complex plane, main complex functions and their characteristics, holomorphic functions, properties of holomorphic functions, Cauchy - Riemann equations, zeros of holomorphic functions, power series, analyticity of holomorphic functions, complex path integrals, Cauchy Theorem, Cauchy Formulas, isolated singularities, Laurent series, residues, Residue theorem, Jordan Lemma (both versions), applications to the calculus of real and complex integrals, Fourier transform, Riemann-Lebesgue Theorem, properties, Fourier anti-transform, Fourier transform and convolution, Parseval Identity, applications, Laplace transform, the set of Laplace transformable functions, holomorphicity of the transformed function, properties, Laplace transform and convolution, Laplace anti-transform, applications.

Modalità d'esame:

written test

Risultati d'apprendimento previsti:

Knowing the basic concepts and techniques of complex analysis and its applications

Testi di riferimento:

Complex Analysis M.W.Wong World Scientific Ed.

Mathematical Analysis for Engineers Dacorogna-Tanteri

Schaum's Outlines Complex Variables, McGraw Hill Ed.

