

Titolo del corso: Advanced Topics in Holomorphic Function Theory

Docente/i Nicola Arcozzi

20 ore

January-March 2025

Corso di base

Modalità di valutazione: Homework sets and seminar

Abstract. The course goes through some chapters of complex analysis in one variable, assuming the student is familiar with the basics of holomorphic theory: e.g. powers series, Cauchy-Riemann equations, meromorphic functions, and complex integration, integrals with residues. Measure theory, Fourier series and the basics of functional analysis, especially Hilbert spaces, are assumed to be known.

Programma. Riemann mapping theorem and Carathéodory extension theorem; harmonic and sub-harmonic functions; zeros and growth of holomorphic functions; H^p spaces; Beurling's theorem on the invariant subspaces for the shift; ideals and Carleson's corona theorem; C. Fefferman's H^1 -BMO duality theorem. The choice of the topics might somewhat vary depending on the interests and the background of the class.