

## Math 606 Syllabus Spring 2003

1. Power series, Taylor and Laurent expansions. Weierstrass and Hurwitz theorems. Mittag-Leffler theorem on  $\mathbb{C}$ . Infinite products. Entire functions and their classification. Special functions.
2. Conformal mapping. Normal families, Arzela's theorem. The Riemann mapping theorem. Schwarz-Christoffel transformations. Dirichlet Problem.
3. Riemann surfaces. Basics; definition, holomorphic maps, meromorphic functions, holomorphic and meromorphic differentials, branch points, Riemann-Hurwitz formula.
4. Elliptic function theory.
5. Illustration of applications of complex analysis in geometry, isothermal coordinates, minimal surfaces, elasticity.