Catalog Description:
Theoretical treatment of complex analysis.

Prerequisite:
C or better in 5520H or permission of department.

Text:
Vary, for example:
- *An Introduction to Complex Function Theory*, by B.P. Palka
- *Elementary Theory of Analytic Functions of One or Several Complex Variables*, by H. Cartan
- *Complex Analysis with Applications*, by Silverman

Topics List:
1. Complex numbers, Riemann's sphere. Complex functions, elementary functions, Möbius transformations.
2. Holomorphic functions, Cauchy-Riemann equations.
4. Harmonic functions.
6. Isolated singularities, meromorphic functions, the calculus of residues.
7. Conformal mappings, the Riemann mapping theorem.
8. Geometric principles.
10. Analytic continuation, Riemann surfaces.
11. Applications to number theory, geometry, physics.