

Math 410 - Complex Analysis  
Herman Gluck  
Fall 2016

## **0. MATH 410 - COMPLEX ANALYSIS - SYLLABUS**

Text: Joseph Bak and Donald J. Newman  
"Complex Analysis" Third edition, Springer.

1. The Complex Numbers (2 days)
2. Functions of the Complex Variable  $z$  (2 days)
3. Analytic Functions (1 day)
4. Line Integrals and Entire Functions (2 days)
5. Properties of Entire Functions (2 days)
6. Properties of Analytic Functions (2 days)
7. Further Properties of Analytic Functions (1 day)
8. Simply Connected Domains (1 day)

- 9. Isolated Singularities of an Analytic Function (1 day)
- 10. The Residue Theorem (1 day)
- 11. Applications of the Residue Theorem to the Evaluation of Integrals and Sums (2 days)
- 13. Introduction to Conformal Mapping (3 days)
- 14. The Riemann Mapping Theorem (2 days)
- 16. Harmonic Functions (1 day) ... 23 days so far

Number of pages:

1 - 11: 160 pages / 13 & 14: 45 pages / 16: 15 pages

Total: 220 pages / 28 days

Aim for 10 pages per day to leave room for special topics