Complex Variables II      REVIEW TOPICS      April 17, 2007

1. Basic transformations secs. 84,85. Definition and properties of LFTs. Implicit form of an LFT, sec 106. (Note: while this material came at the end of the first semester, it will be part of the material covered by this final.)

2. Conformal mapping: Definition of, scale factor and angle preservation, local inverses secs 94-96. Harmonic conjugates, transformation of boundary conditions, secs 97,98.

3. Applications of conformal mapping: steady fluid flow only. The complex potential, calculation of the velocity, calculation of streamlines. secs 106-108.

4. Schwarz-Christoffel transformation: Mapping of upper half plane onto a polygon. Triangles and rectangles. Degenerate cases. secs 109-112.

5. Poisson integral formula, Dirichlet problems for circle and half plane, Schwarz integral formula.secs 116-120.