

Study Guide for Ph.D. Examination in Math 310 (Applied Math)

Subject Areas:

- a. Banach Spaces
- b. Linear Operator Theory
- c. Nonlinear Operators and the Initial Value Problem
- d. Compact sets of Banach Spaces
- e. Adjoint Operator on Hilbert Space
- f. Linear Compact Operators
- g. Fredholm Alternative
- h. Fixed Point Theorems
- i. Spectral Theory of Compact Operations
- j. Distributions and the Fourier Transform

References:

1. Hutson and Pym, *Application of Functional analysis and Operator Theory*
2. Cheney, W., *Analysis for Applied Mathematics*