

QUALIFYING REVIEW EXAM SYLLABUS: APPLIED FUNCTIONAL ANALYSIS

Exam topics. This exam covers topics in functional analysis that are used in the analysis of ordinary and partial differential equations and related areas. Specific topics include: metric and normed linear spaces, Banach spaces and the contraction mapping theorem, Hilbert spaces and spectral theory of compact operators, distributions and Fourier transforms.

Reference textbook. J. K. Hunter and B. Nachtergaele, *Applied Analysis*, World Scientific, Singapore, 2001.

Corresponding Alpha Course. Math 556.