Ph.D. Analysis Qualifier Syllabus

The Ph.D. analysis qualifier examination is based on the first 8 chapters of (green) Rudin.

Exclusions from these chapters are

1. Orthonormal Sets, pp.82-87 in Chapter 4,
2. Trigonometric Series, pp.88-92 in Chapter 4,
3. The Banach-Steinhaus Theorem, pp.98-99 in Chapter 5,
4. Fourier Series of Continuous Functions, pp.100-103 in Chapter 5,
5. Fourier Coefficients of L^1 functions, pp.103-104 in Chapter 5,
6. An Abstract Approach to the Poisson Integral, pp.108-112 in Chapter 5,
7. Convolutions, pp.170-171 in Chapter 8,
8. Distribution Functions, pp. 172-174 in Chapter 8.

Here is a common listing of homework from the first 8 chapters of Rudin.

Ch1	1, 2, 3, 5, 6, 7, 8, 10, 12, 13
Ch2	1, 9, 10, 11, 12, 15, 16, 20, 21
Ch3	3, 4(abde), 5(abc), 16(up to the hint), 18
Ch4	1, 5, 7, 16
Ch5	2, 7, 13, 14
Ch6	1, 2, 3, 4, 5, 6, 10, 11, 12, 13
Ch7	1, 10, 11, 12, 13, 17, 19, 22,
Ch8	7, 8, 9, 11, 12, 13

Any of these questions, and any of the theorems (statements and/or proofs) and examples from the first 8 chapters of Rudin (except the exclusions listed above) may appear on the Ph.D. analysis qualifier examination.