Oregon State University – Department of Mathematics
Qualifying Exam Syllabus (Revised Spring 2018)

Real Analysis:

Metric and normed spaces, including the sequence spaces $\ell_p$. Continuity, uniform continuity, spaces of continuous functions. Completeness and applications including Banach fixed point theorem. Convergence of sequences of functions. Compactness, including Arzela-Ascoli theorem.

Some topics from undergraduate real analysis which are supposed to be known and may be used for examples include: topology of $\mathbb{R}^n$; differential calculus, including (Frechet) differentiable functions on $\mathbb{R}^n$; inverse/implicit function theorems; Riemann integration; countable and uncountable sets.

References:


Linear Algebra:


References:

- Friedberg, Insel, Spence: *Linear Algebra*, (Prentice-Hall)
- Hoffman and Kunze: *Linear Algebra*, (Prentice-Hall)