Math 8276: Qualifying Exam Syllabus
August 2023 Exam

Textbooks:
- *Introduction to Dynamical Systems*, by Michael Brin and Garrett Stuck
- *An Introduction to Ergodic Theory*, by Peter Walters
- *Equilibrium States and the Ergodic Theory of Anosov Diffeomorphisms*, by Rufus Bowen

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Ergodic theory
- Recurrence
- Ergodicity and mixing
- Examples
- Ergodic theorems
- Invariant measures for continuous maps

Entropy theory
- Entropy of a partition
- Conditional entropy
- Entropy of a measure-preserving transformation
- Examples
- Variational principle

Thermodynamic formalism
- Gibbs measures
- Ruelle's Perron-Frobenius Theorem
- Construction of Gibbs measures
- Variational principle
- Further properties