

Oral Qualifying Exam Syllabus

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1 Set Theory

- König's theorem
- Generalized Δ -system lemma
- Shoenfield's absoluteness
- Constructible hierarchy
- Suslin and Aronszajn tree
- Basics of forcing; consistency of CH , $\neg\text{CH}$ and $\diamond$
- Product forcing
- Iterated forcing; Easton forcing and consistency of $\text{MA} + \neg\text{CH}$
- Measurable cardinal

2 Model Theory

- Completeness and compactness
- Quantifier elimination
- Omitting types theorem
- Atomic and prime models
- Saturated and homogeneous models
- Indiscernibles
- ω -stability and Morley rank
- $\aleph_0$ -categoricity and Morley's categoricity theorem

3 Recursion Theory

- Church's thesis
- Recursively enumerable set
- Recursion theorem
- Complete and immune sets
- Relative computability
- Turing degree and Friedberg's theorem
- Arithmetical hierarchy