Analysis (Honors)
MATH-UA.0328
Tu,Th 11-12.15
Room 1302, WWH

Text: FOUNDATIONS OF MATHEMATICAL ANALYSIS

by Richard Johnsonbaugh. and W.E. Pfaffenberger.

Syllabus.

Week 1. Sets and functions

Week 2. Real Number system, Axioms. Existence and Uniqueness
Equivalence of sets. Cardinality

Week 3. Sequences. Limits. Lim sup, Lim inf, Bounded Sequences, Subsequence.

Week 4. Infinite Series. Tests for convergence. Absolute and Conditional convergence, Alternating sums. Power Series

Week 5 Reviiew, Catchup. First mid term.

Week 6. Continuous functions.

Week 7. Metric Spaces. Completeness, Compactness, Baire category Theorem.

Week 8. Differentiation. Mean value theorem. L'Hospital's theorem, Taylor Series

Week 9. Riemann-Stieltjes Integrals. Integrability. Measure 0.

Week 10. Uniform convergence, power series, Second Midterm

Week 11. Lebesgue Integral

Week 12. Fourier Series

Week 13,14. Revision.

Dec 16-18 Finals.

28 Sessions. Sept (9) 2, 7, 9,14,16, 21, 23, 28, 30, Oct (7) 5,7,14 19,21, 26,28, Nov(8) 2,4,9,11,16,18, 23,30, Dec (4) 2,7,9,14