

MAT 701 Fall 2010

8-9:20 TuTh

Professor: Andrew Vogel PB 229F, 3-1584, alvogel@syr.edu, Office hours: TuTh 1-2pm, WF 9:00-10:00am, and by appointment.

Text Book: Real Analysis Modern Techniques and Their Applications, Second Edition, Gerald Folland, Wiley-Interscience, 1999. Other books you should be reading in are

- MR0924157 (88k:00002) Rudin, Walter . Real and complex analysis. Third edition. McGraw-Hill Book Co., New York, 1987. xiv+416 pp. ISBN: 0-07-054234-1
- MR0492146 (58 #11295) Wheeden, Richard L. ; Zygmund, Antoni . Measure and integral. An introduction to real analysis. Pure and Applied Mathematics, Vol. 43. Marcel Dekker, Inc., New York-Basel, 1977. x+274 pp. ISBN: 0-8247-6499-4
- MR1013117 (90g:00004) Royden, H. L. Real analysis. Third edition. Macmillan Publishing Company, New York, 1988. xx+444 pp. ISBN: 0-02-404151-3

Course Content: Chapters 1, 2, 3, parts of 5, parts of 6. Topics include: σ -algebras, outer measures, borel measures, measurable functions, integration, modes of convergence, Fubini-Tonelli theorem, signed measures, Radon-Nikodym theorem, differentiation of measures, Banach Spaces, linear functionals, uniform boundedness principle, L^p spaces and their duals. Other topics as time permits.

Grading: Homework 30% , one semester exam 30% in the last half of october and a final exam 40 % . You are encouraged to discuss the homework problems with each other, but what you write up and hand in should be your own.

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