

Catalog Description:

Topics in calculus and analysis.

Prerequisites:

Either C- or better in 2153, 2162.xx, 2173, 2182H, or 4182H; or credit for 254, 263.xx, 263.01H, 264H, or equivalent;

-and- C- or better in Math 2568, 5520H, or equivalent.

Exclusions: Entry to this course is restricted to graduate students in Statistics or Biostatistics who have permission from the Departments of Statistics or Biostatistics.

Text:

Introduction to Real Analysis, by William F. Trench, Edition 1.03, published by Library of Congress Cataloging-in-Publication Data, ISBN: 0-13-045786-8

Topics List:

1. Limits and continuity of functions.
2. Derivative, mean value theorem, optimization.
3. Sequences and series, uniform convergence, power series, Taylor's theorem.
4. Riemann integral, substitution, bounded variation, limit properties, Riemann-Stieltjes integral.
5. Multivariable functions, directional derivatives, chain rule, Taylor's theorem.
6. Inverse and implicit function theorems, Lagrange multipliers, multiple integrals, Jacobians, differentiation under the integral sign.