



SPRING 2011

MATH 370 : CALCULUS ON MANIFOLDS

MON, WED, FRI 10-10:50 AM

COURSE DESCRIPTION:

The course is an introduction to manifolds and their properties. Manifolds are one of the main concepts of modern geometry and topology and they are used everywhere in mathematics and its applications. Roughly, manifolds are geometrical objects that can be endowed with coordinates, so that using these coordinates one can apply differential and integral calculus.

Topics: topology in \mathbb{R}^n , the Inverse Function Theorem, change of variables, partition of unity, multilinear algebra, vector fields, differential forms, Stokes' theorem.

TEXTBOOK:

James R. Munkres, *Analysis on Manifolds*, Westview Press, 1997.

PREREQUISITES:

MATH 212 and linear algebra (MATH 211 or MATH 355)

or

MATH 221 / 222

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