Course Announcement: **MAT 502**

Title of Course: **Geometry and Topology of Manifolds, II**

Instructor: **Brett Kotschwar**

Class Number: **30634**

Location/Time: **WXLR A304 - T/Th 3:00-4:15pm**

COURSE DESCRIPTION: This course will provide a rigorous introduction to fundamental concepts and techniques in differential geometry and topology, including such topics as smooth manifolds, smooth maps, tangent spaces, immersions, submersions, embeddings, vector and tensor fields, vector bundles, Lie groups and their Lie algebras, Riemannian manifolds, differential forms and integration on manifolds. Time permitting; we will conclude the course with an introduction to De Rham cohomology.

PREREQUISITES: A solid background in analysis, vector calculus, basic (point-set) topology, linear and abstract algebra at the advanced undergraduate level. Completion of MAT 501 (Geometry and Topology of Manifolds, I) is not required, however, familiarity with some of the material in that course will be assumed. Students with questions about the prerequisites are encouraged to contact the instructor.

TEXTBOOK: Introduction to Smooth Manifolds (Second Edition) by John M. Lee, Springer, 2013. ISBN: 978-1-4419-9982-5