Course Announcement for Fall 2017
Math 595 – Differential Geometry (3 credits)
MWF at noon

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This course serves as an introduction to differential geometry. Differential geometry has a rich history and is widely applicable across the various fields of mathematics. You might think of this course as a continuation of vector calculus.

Prerequisites are a comfort with abstract mathematics, linear algebra, and multivariable calculus and it is appropriate both for graduate students and strong undergraduates. The course will emphasize concrete aspects of the subject centered on the notion of curvature. The differential geometry of surfaces introduces many of the key ideas and techniques of the general subject and thus will be a focus. Topics include:

1. Local geometry (Eg: geometry of angles lengths and distances) and global geometry (Eg: area/volume) of curves in the plane and other hypersurfaces.

2. The Gauss-Bonnet Theorem (relates the geometry of surfaces to their Euler characteristic).