# MATH 2801: DIFFERENTIAL GEOMETRY 2

**Instructor**   Jason DeBlois
**Office**   Thackeray 407
**Email**   jdeblois@pitt.edu

## Texts

- Wolfgang Kühnel, *Differential Geometry: curves – surfaces – manifolds*
  We will cover Chapters 5–7 here.
- V. Guillemin and A. Pollack, *Differential Topology*
- F. Warner, *Foundations of Differentiable Manifolds and Lie Groups*
  I will mostly use these as sources for material on differential forms.
  You don't have to buy them.

**The (tentative, rough) Plan (briefly)**   I expect to spend $7 - 10$ weeks covering Kühnel's Chapters 5–7: differentiable manifolds, Riemannian metrics, the Riemann curvature tensor, and the constant-curvature spaces. Then I will introduce differential forms and describe at least three major applications: integration on manifolds and Stokes' theorem, curvature forms, and deRham cohomology and the deRham theorem.

## Grading

- Homework: 50 % (assigned and graded biweekly)
- Final project: 50 % (either a 3–5 page paper on a subject you choose and I approve, or a 50 minute conference-style talk — to be determined.)

**Course website**   `http://pitt.edu/~jdeblois/diffgeo2.html`
  I will post office hours and homework assignments here, and maybe other stuff.
  Grades will be posted to Courseweb.