

# MA641: Differential Geometry

Fall 2002

Instructor	P. D. Hislop
Office:	753 POT 7-5637 or hislop@ms.uky.edu
Text:	M. P. do Carmo: <i>Riemannian Geometry</i> Birkhäuser Boston 1992.
Class Meetings:	MWF 2:00–2:50PM CB 343
Course web page:	<a href="http://www.ms.uky.edu/hislop/">http://www.ms.uky.edu/hislop/</a>
Office Hours:	M 3-4; W 4-5; and feel free to stop by or email me.

## Course Topics

Our goal will be to cover the first nine chapters of do Carmo's book—Chapters 0–4. We will study differentiable manifolds, and structures on these manifolds. I plan to emphasize basic examples throughout the course. The big topics are:

1. Differentiable manifolds
2. Riemannian Metrics
3. Connections
4. Geodesics
5. Curvature

Once we cover these, we will look at two advanced topics: Chapter 7 on complete manifolds and Chapter 8 on spaces of constant curvature.

**Course Requirements:** I will assign problem sets throughout the course. Problem sets will be posted on the course web site.

## Other Books:

There are some other very useful books that you might want to look at:

1. M. Spivak: *Calculus on Manifolds*, Menlo Park, CA: W. A. Benjamin, 1965.
2. M. Spivak: *A Comprehensive Introduction to Differential Geometry*, Volume 1, Boston: Publish or Perish, 1975.
3. B. O'Neill: *Elementary Differential Geometry*, New York: Academic Press, 1966.
4. R. S. Millman, G. D. Parker: *Elements of differential geometry*, Englewood Cliffs, N. J.: Prentice-Hall Inc., 1977.

## Special Dates

6 September	Labor Day-No classes
15 September	Last date to drop with no W
5 November	Last day to withdraw
24–26 November	Thanksgiving Holiday-No classes
10 December	Last day of classes