

MATHEMATICS 425/525 Section 101
Introduction to Modern Differential Geometry

INSTRUCTOR:

- Joel Feldman
- Math building room 221
- 822-5660
- feldman@math.ubc.ca
- <http://www.math.ubc.ca/~feldman/>
- office hours: Monday 10:00–11:00, Tuesday 11:00–12:00, Thursday 2:00–3:00

TEXT: Frank W. Warner, *Foundations of Differentiable Manifolds and Lie Groups*, Springer, 1983.

I will post all handouts, problem sets, etc. on the web at

<http://www.math.ubc.ca/~feldman/m425/>

TOPICS:

1. Manifolds (§1):
 - Definition, examples
 - Tangent and cotangent vectors
 - Submanifolds
 - Frobenius theorem
2. Tensors (§2):
 - Tensor and exterior algebras
 - Tensor fields and differential forms
3. Integration on Manifolds (§4):
 - Orientation of manifolds
 - Integrals of forms
4. Another topic, like “Lie Groups” or “Geodesics and Curvature”

GRADING:

- There will be weekly problem sets accounting for about 50% of the final mark.
- The final exam will account for about 50% of the final mark.
- Grades **will probably be scaled**.

POLICIES:

- Working together on homework is encouraged, but you should write your solutions on your own.
- The final examination will be strictly closed book: no formula sheets or calculators will be allowed.
- There is no supplemental examination in this course.
- Missing a homework normally results in a mark of 0. Exceptions may be granted in two cases: prior consent of the instructor or a medical emergency.