Typical sequence of geometry courses in our M.Sc.

1. **Differential Geometry I:** Riemannian manifolds, the Levi-Civita connection, the Riemann curvature tensor, geodesics, distance functions, Cartan-Hadamard, Bonnet-Myers

2. **Lie groups and principal bundles**

3. **Differential Geometry II:** curvature comparison theorems, Cheeger-Gromoll soul theorem, Betti number estimates

   alternatively: an intermediate course in Kähler manifolds, geometric analysis (spectral theory, Hodge theory), general relativity or geometric group theory

4. an advanced **topics course or seminar** in any of the above areas (e.g., Ricci flow, regularity theory of geometric PDEs) to support the writing of a Master's Thesis

Faculty Research in Differential Geometry at Münster

- **positive curvature, Alexandrov spaces** (Wilking)

- **Ricci flow, Einstein metrics** (Böhm, Hein, Wilking)

- **Lie group actions** (Böhm, Siffert, Wilking)

- **Kähler manifolds, complex geometry** (Hein, Santoro)

- **general relativity, scalar curvature** (Holzegel, Lohkamp)

- **index theory of Dirac operators** (Ebert, Ludwig, Zeidler)

- **geometric group theory, buildings** (Kramer)