DIFFERENTIAL GEOMETRY
SMI - PERUGIA 2021

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Description. This course will cover the basics of differential geometry together with closely related concepts in Riemannian geometry. The contents of the course may depend in part on the background, preparation, and interest of the students, thus making the list of topics below somewhat flexible.

- Differentiable manifolds.
- Vector fields.
- Tensors and tensor fields.
- Integration on manifolds.
- Riemannian manifolds.
- Curvature.
- Geodesics and Jacobi fields.
- Isometric immersions.

Texts. Basically, we will follow some chapters of the following texts.

- W. Boothby: An introduction to differentiable manifolds and Riemannian geometry, Academic Press, 1986.
- M. P. Do Carmo: Riemannian Geometry, Birkhauser, 1992.

Prerequisites. As a prerequisite to the course, we will assume some basic familiarity with topology, linear algebra and differential and integral calculus of one and several real variables, but the students are not expected to be expert in these topics.