



5 credits

30.0 h + 30.0 h

Q1

Teacher(s)	Haine Luc ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	<i>The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.</i>
Aims	<i>The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".</i>
Content	<p>In 2018-2019, the course will address the basic notions of differential and riemannian geometry.</p> <ul style="list-style-type: none"> - Differentiable manifolds, immersions, submersions, embeddings, examples. - Vector fields, Lie bracket. - Differential forms, Stokes-Cartan formula. - Riemannian geometry, curvature, Poincaré-Hopf theorem and its link with the Gauss-Bonnet formula. <p>One of the goal of the class is to show how topological invariants of varieties manifest themselves through the study of vector fields, differential forms and riemannian metrics.</p> <p>Differential geometry is the basis for the study of the modern developments in mechanics, in particular in symplectic geometry, as well as in general relativity.</p>
Bibliography	<p>Syllabus disponible sur Moodle.</p> <p>Référence bibliographique: L. Godinho, J. Natário, An Introduction to Riemannian Geometry, with Applications to Mechanics and Relativity, Springer UTX 2014.</p>
Faculty or entity in charge	MATH

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Bachelor in Mathematics	MATH1BA	5	LMAT1141 AND LMAT1241	
Minor in Mathematics	LMATH100I	5		
Additional module in Mathematics	LMATH100P	5		