

課程大綱及進度表

開課系所	應數所碩一二
開課學年	99
開課學期	1
課程名稱(中文)	微分幾何導論
課程名稱(英文)	Introduction to Differential Geometry
課程碼	L154800
分班碼	
先修科目或先備能力	Calculus, Linear Algebra
學分數	3
開課教師	江孟蓉
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Office Hours	By Appointment
課程概述	This is the introductory course on differential geometry. Among the topics covered are smooth manifolds and maps, the structure of the tangent bundle and its associates, the calculation of real cohomology groups using differential forms (de Rham theory), and applications such as the Poincare-Hopf theorem relating the Euler number of a manifold and the index of a vector field.
教學目標	Introduction to differential geometry for graduate students in mathematics
授課課程大綱明細	<ol style="list-style-type: none"> 1. Differential Manifolds and Differentiable Maps 2. The Derivatives of Differentiable Maps 3. Fibre Bundles 4. Differential Forms and

	<p>Integration</p> <ol style="list-style-type: none"> 5. The Exterior Derivative 6. De Rham Cohomology 7. Degrees, Indices and Related Topics 8. Lie Groups
參考書目	<p>An Introduction to Differential Manifolds by Dennis Barden and Charles B. Thomas, Imperial College Press (2003)</p>
課程要求	<p>Good understanding of the basic definitions, examples, and theorems</p>
評量方式	<p>Attendance 30%, Class participation 30%, Weekly quiz 30%, Final Exam 10%</p>
課程網址	
助教資訊	
備註	