

M.Phil (Mathematics) for students admitted from 2012-2013 onwards

D.G.Vaishnav College (Autonomous) Chennai 600106

M.Phil. DEGREE COURSE IN MATHEMATICS

*Applicable to candidates admitted from the
academic year 2012-2013 onwards*

Category	Paper	Title of the Paper	Marks		Duration of Exam	Credits
			Int.	End Sem Exam		
Semester -I						
Core	1	Algebra & Analysis			3 Hrs	
Core	2	Topology & Geometry			3 Hrs	
Elective	3	Optional Paper			3 Hrs	
Semester -II						
		Dissertation				

Title of the Course		ALGEBRA & ANALYSIS					
Paper Number		1					
Category	Core	Year	I	Credits	4	Course Code	
		Semester	I				
Course Outline		Algebra UNIT-I : Associative algebra – Chapter 1 Modules – Chapter 2					
		Algebra UNIT-II : The Structure of Semi Simple algebras – Chapter 3 The Radical – Chapter 4					
		Analysis UNIT-III : L^p Spaces – Chapter 3 Elementary Hilbert space theory – Chapter 4					
		Analysis UNIT-IV : Examples Banach space techniques – Chapter 5					
		Analysis UNIT-V: Fourier Transforms – Chapter 9 Holomorphic Fourier transforms – Chapter - 19					
Text Books		Associative Algebras – R.S. Pierce, Springer Verlag GTM 88(1982) Real and Complex analysis – W.Rudin - TMH 2 nd edition (1980)					

Question paper pattern

Two questions from each unit.
5 out of 10 questions are to be answered.

Title of the Course		TOPOLOGY & GEOMETRY				
Paper Number		2				
Category	Core	Year	I	Credits	4	Course Code
		Semester	I			
Course Outline		Differential Geometry UNIT-I : Differential form in R^n – Chapter 1 Line integrals – Chapter 2				
		Differential Geometry UNIT-II : Differentiable Manifolds – Chapter 3				
		Differential Geometry UNIT-III : Integration on Manifolds, Stoke's theorem & Poincare's lemmas – Chapter 4				
		Topology UNIT-IV : Fundamental group and covering spaces – Chapter 3				
		Topology UNIT-V: Simplicial complexes – Chapter 4				
Text Books		Differential Geometry – Differential forms and applications – M.P. de carmo, Springer verlag (1984) Topology – Lecturer notes on elementary topology and geometry – I.M. Singer and J. A. Thorpe. Springer verlag (1967)				

Question paper pattern

Two questions from each unit.
5 out of 10 questions are to be answered.

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Paper 3 – Optional Paper

The concerned supervisors will conduct examinations internally

Question paper pattern

Two questions from each unit.
5 out of 10 questions are to be answered