

UNIVERSITÀ degli STUDI di PADOVA
Dipartimento di Matematica "Tullio Levi-Civita" - DM
MASTER in MATHEMATICS - Classe: LM-40 - Matematica

Structure of the Study Plan:	courses:	term	credits:	
1. ALGEBRA: one course among:	INTRODUCTION TO RING THEORY	I	8	
	INTRODUCTION TO GROUP THEORY	I	8	
	RINGS AND MODULES	II	6	
	REPRESENTATION THEORY OF GROUPS	II	6	
2. GEOMETRY: one course among:	DIFFERENTIAL GEOMETRY	I	8	
	COMMUTATIVE ALGEBRA	I	8	
	ALGEBRAIC GEOMETRY 1	II	8	
	TOPOLOGY 2	I	6	
	ALGEBRAIC GEOMETRY 2	II	6	
	HOMOLOGY AND COHOMOLOGY	II	6	
3. ANALYSIS: two courses among:	INTRODUCTION TO PARTIAL DIFFERENTIAL EQUATIONS	I	8	
	FUNCTIONS THEORY	I	8	
	ADVANCED ANALYSIS	II	8	
	CALCULUS OF VARIATIONS	II	8	
	HARMONIC ANALYSIS	I	6	
	COMPLEX ANALYSIS	I	6	
	FUNCTIONS OF SEVERAL COMPLEX VARIABLES	I	6	
	DIFFERENTIAL EQUATIONS	II	6	
4. PROBABILITY: one course among:	INTRODUCTION TO STOCHASTIC PROCESSES	I	8	
	STOCHASTIC ANALYSIS	I	7	
5. MATH.PHYSICS: one course among:	DYNAMICAL SYSTEMS	I	7	
	SYMPLECTIC MECHANICS	II	6	
	HAMILTONIAN MECHANICS	II	6	
6. three to four courses among:	the previous ones not already chosen, or			
	MATHEMATICAL LOGIC 2	I	6	
	NUMBER THEORY 1	I	8	
	NUMBER THEORY 2	II	6	
	ADVANCED STOCHASTIC PROCESSES	II	7	
	STOCHASTIC METHODS FOR FINANCE	II	7	
	HIGH DIMENSIONAL PROBABILITY FOR DATA SCIENCE	I	6	
	NUMERICAL LINEAR ALGEBRA AND LEARNING FROM DATA	I	7	
	NUMERICAL METHODS FOR DIFFERENTIAL EQUATIONS	II	7	
	OPERATIONS RESEARCH	I	8	
	OPTIMIZATION	II	6	
	CRYPTOGRAPHY	I	6	
	MODERN PHYSICS	II	8	
7. one or two free courses among:	the previous ones not already chosen, or			
	from the pool of courses available in the whole University			
for at least 80 credits of courses.				
8. compulsory:	SEMINAR		4	4
	FINAL EXAMINATION (MASTER THESIS)		36	36
in total at least 120 credits.				
NOTES:	some courses may not be activated every year; there are further courses taught in Italian.			
	free courses must be chosen consistently with the curriculum, credits must amount from 8 to 16.			
	the study plan must contain no more than 12 courses.			
	terms: I (approx October-January), II (approx March-June).			