

# Mathcamp 2016 Tentative Four-Week Schedule

Time	Week 1	Week 2	Week 3	Week 4
9:10	Introduction to Graph Theory 👉 (Marisa)	Dynamical Systems 🍷🍷 (Jane)	Advanced Topics in... Sorting? 🍷🍷 (Zach)	Asymptotics of Generating Functions 🍷🍷 (Kevin)
	Point-Set Topology 🍷🍷 (Chris)	Field Extensions and Galois Theory (1/2) 🍷🍷🍷 (Mark)	[HR] Bad Domains, Bad Factorization 🍷🍷🍷 (Alfonso Gracia-Saz)	Does ESP Exist? 🍷🍷 (Mira Bernstein)
	Spin: Numbers as Rotations 🍷🍷🍷 (J-Lo)	Model Theory 🍷🍷 (Steve Schweber)	Nonzero-Sum Games 👉 (Pesto)	Knot Theory 👉 (Jeff)
	[HR] Statistical Modeling 🍷 (Sam)	Neural Networks 👉 (Kevin)	Pythagorean Triples, Diophantine Equations and Fermat's Last Theorem 🍷 (John Mackey)	[HR] Problem Solving: Polynomials 🍷🍷🍷 (Pesto)
	[HR] Systems of Polynomial Equations 🍷🍷 (Nic)	[HR] Problem Solving: Induction 🍷 (Misha)	The Wallis Product 👉 → 🍷🍷🍷 (Jon Tannenhäuser)	Representation Theory of Finite Groups (2/2) 🍷🍷🍷 (Mark)
10:10	The Democracy of Number Systems 🍷🍷 (Clifton Cunningham)	Almost Planar 🍷 (Marisa)	Field Extensions and Galois Theory (2/2) 🍷🍷🍷 (Mark)	From Matrices to Representations 🍷🍷 (Noah Snyder)
	Cutting Surfaces into Silly Straws 👉 (Assaf)	Board Game Theory 👉 (Assaf)	[HR] Extending Inclusion-Exclusion 🍷🍷 (Jeff)	Harmonic Functions on Graphs 🍷🍷 (Yuval)
	Generating Functions and Partitions 🍷🍷 (Mark)	Multilinear Algebra 🍷🍷🍷 (Nic)	[HR] Problem Solving: Symmetry, Parity and Invariants 🍷 (Joshua Zucker)	Ponzi Schemes in Infinite Groups 🍷🍷 (Fedya Manin)
	[HR] Introduction to Group Theory 🍷 (Kevin)	[HR] The Word Problem for Groups 🍷 (Assaf)	The Topology and Geometry of Surfaces 👉 (Jane)	Quantum Mechanics 🍷🍷 (Nic)
	[HR] Problem Solving: Triangle Geometry 🍷🍷 (Zach)	[HR] Why Are We Learning This? 👉 (Sam)	What Can We Exponentiate? 🍷🍷 (Assaf)	[S] Spectral Graph Theory ( $\frac{1}{2}$ ) 🍷🍷 (Sachi)
11:10	[HR] How Not to Prove the Continuum Hypothesis 🍷🍷🍷 (Susan)	[S] Building Mathematical Structures ( $\frac{1}{2}$ ) 👉 (Zach)	[HR,S] A Tale of Combs and Hedgehogs ( $\frac{1}{2}$ ) 🍷🍷🍷 (Alfonso + Chris)	Burnside's Lemma 🍷 (Alfonso Gracia-Saz)
	Huuuge Primes 🍷 (David)	Graph Minors 🍷🍷 (Pesto)	[HR] dCalculus 👉 (Jeff)	Harmonic Analysis on Abelian Groups 🍷🍷🍷 (Michael Orrison)
	Linear Algebra (1/2) 🍷🍷 (Mark)	History of Math 👉 (Moon Duchin)	K-Theory 🍷🍷🍷 (Don)	[HR] Mathcampers Show Presentations 👉 (Sam + Chris)
	Models of Computation Simpler than Programming 🍷 (Pesto)	Linear Algebra (2/2) 🍷🍷 (Mark)	[S] Random Graphs ( $\frac{1}{2}$ ) 🍷🍷 (Misha)	[S] Spectral Graph Theory ( $\frac{2}{2}$ ) 🍷🍷 (Sachi)
	Sum and Product Puzzles 👉 (Don)	[HR,S] The Banach–Tarski Paradox ( $\frac{1}{2}$ ) 🍷🍷 (Chris)	Representation Theory of Finite Groups (1/2) 🍷🍷🍷 (Mark)	The Fundamental Group 🍷🍷 (Jane)
1:10	Combinatorial Games 🍷 (Jane)	[S] Building Mathematical Structures ( $\frac{2}{2}$ ) 👉 (Zach)	[HR] A Crash Course in Axiomatic Probability 🍷🍷 (Sam)	Cut That Out! 🍷 (Zach)
	[HR] Introduction to Ring Theory 🍷🍷 (Ari Nieh)	Chip Firing 🍷🍷 (Sam Payne)	Group Actions 🍷🍷 (Don)	[HR,S] A Tale of Combs and Hedgehogs ( $\frac{2}{2}$ ) 🍷🍷🍷 (Alfonso + Chris)
	[HR] Mathcamp Crash Course 👉 (Nina White)	Divergent Series 🍷 (Sachi)	Finitely-Generated Algebras 🍷 (Susan)	Stupid Games on Infinite Sets 🍷 (Susan)
	Card Shuffling 🍷 (Zach)	de Bruijn Sequences 🍷 (Pesto)	Geometric Group Theory 🍷🍷🍷 (Susan)	The Word Problem for Hyperbolic Groups 🍷🍷🍷 (Assaf)
	Analytic Number Theory 🍷🍷🍷 (Sachi)	[HR,S] The Banach–Tarski Paradox ( $\frac{2}{2}$ ) 🍷🍷 (Chris)	[HR] Functional Programming 🍷 (Nic)	Trail Mix 👉 → 🍷🍷 (Mark)
		[S] Random Graphs ( $\frac{2}{2}$ ) 🍷🍷 (Misha)	TBA 🍷🍷 (Po-Shen Loh)	
			Universal Properties 🍷🍷 (Don)	

[M] Algebraic Groups 🍷🍷 (Don)

[M] Algebraic Number Theory 🍷🍷 (David)

Key: [HR]—Homework Required [S]—Superclass [M]—Marathon ( $k/2$ )—Week  $k$  of 2 ( $\frac{k}{2}$ )—Hour  $k$  of 2