[REVISED] Mathcamp 2019 Tentative Four-Week Schedule

(🌶 = chili pepper difficulty indicator)

Time	Week 1	Week 2	Week 3	Week 4
9:10	A Convoluted Process 🌶🌶🌶 (Ben)	Eigenstuff and Beyond 🌶🌶🌶 (Mark)	Fundamental Groups 🌶🌶🌶 (Kayla)	Long Live Determinants 🌶🌶🌶 (Will)
	Beyond Inclusion/Exclusion 🌶🌶🌶 (*John Mackey*)	Galois Correspondence of Covering Spaces 🌶🌶🌶🌶 (Apurva)	Graph Coloring and Containment 🌶🌶 (Pesto)	Musical Lattices 🌶🌶 (J-Lo)
	Harmonic Analysis on Finite Abelian Groups 🌶🌶🌶 (*Mike Orrison*)	Hedetniemi's Conjecture 🌶🌶 (*Yuval Wigderson*)	Systems of Differential Equations 🌶🌶🌶 (Mark)	Root Systems 🌶🌶 (Kevin)
	Intro to Number Theory 🌶🌶 (Gabrielle)	Intro to Algebraic Number Theory 🌶🌶🌶 (J-Lo)	The Weierstrass $\wp$ Function 🌶🌶🌶🌶 (Assaf)	The Mathematics of Fairness 🌶 (Mira)
	Knot Theory 🌶🌶 (Kayla)	**[HR]** Mathcamplandia 🌶 (*Luke Joyner*)	Young Tableaux and Combinatorics 🌶🌶 (Shiyue)	Tychonoff's Theorem 🌶🌶🌶🌶 (Ben)
10:10	Homological Algebra 🌶🌶🌶🌶 (*Jeff Hicks*)	Algorithms in Number Theory 🌶🌶 (Misha)	**[HR]** From High School Arithmetic to Group Cohomology 🌶🌶 (Apurva)	Game Theory 🌶 (Kayla)
	Infinite Graphs 🌶🌶🌶 (*Mia Smith*)	Functions of a Complex Variable (1/2) 🌶🌶🌶 (Mark)	Functions of a Complex Variable (2/2) 🌶🌶🌶 (Mark)	Randomized Algorithms 🌶🌶 (Bill)
	[HR] Mathcamp Crash Course 🌶 (Kevin)	**[HR]** Intro to Ring Theory 🌶🌶🌶 (Will)	Non-Euclidean Geometries 🌶 (Véronique)	Reciprocity Laws in Algebraic Number Theory 🌶🌶🌶🌶 (Eric)
	Multivariable Calculus Crash Course 🌶🌶🌶 (Mark)	Sperner, Monsky, and Brouwer 🌶🌶 (*Laura Pierson*) / Cap Sets 🌶🌶 (*Elizabeth Chang-Davidson*)	**[HR]** Probabilistic Models and Machine Learning 🌶🌶🌶 (Mira)	Riemann Surfaces 🌶🌶🌶 (Apurva)
	Studying Betting Games with Other Betting Games 🌶🌶 (Bill)	Take it to the Limit 🌶🌶🌶 (Ben) / Chaos in Voting 🌶 (Ben)	Units in Algebraic Number Theory 🌶🌶🌶 (Kevin)	Young Tableaux and Enumerative Geometry 🌶🌶🌶 (Shiyue)
11:10	Intro to Gerrymandering 🌶 (Assaf)	All About Quaternions (1/2) 🌶🌶🌶 (Assaf + J-Lo)	All About Quaternions (2/2) 🌶🌶🌶 (Assaf + J-Lo)	Bhargava's Cube 🌶🌶🌶 (*Dave Savitt*) / Magic 🌶🌶 (*Don Laackman*)
	Intro to Group Theory 🌶🌶 (Shiyue)	Discrete Derivatives 🌶🌶 (Tim!)	Problem Solving: Induction 🌶🌶 (Misha)	Building Mathematical Sculptures 🌶 (*Zach Abel*)
	[HR] Logic and Arithmetic 🌶🌶🌶🌶 (*Steve Schweber*)	Group Theory & Rubik's Cubes 🌶🌶🌶 (Gabrielle)	Quantum Mechanics 🌶🌶🌶 (*Nic Ford*)	**[HR]** Representation Theory of Associative Algebras 🌶🌶🌶🌶 (Véronique)
	Problem-Solving Cornucopia 🌶→🌶🌶🌶🌶 (Mark)	**[HR]** Multi-Coefficient Solving of Polynomials 🌶🌶🌶🌶 (Pesto)	Real Analysis (2/2): Measures 🌶🌶🌶🌶 (Ben)	The Hopf–Poincaré Index Formula 🌶🌶🌶 (Assaf)
	Why We Like Complex Projective Space 🌶🌶 (Will)	**[HR]** Real Analysis (1/2): Limits 🌶🌶 (Véronique)	Thinking of Images as Mathematical Objects 🌶 (*Olivia Walch*)	Zeta Functions 🌶🌶🌶 (*Sachi Hashimoto*)
1:10	Cluster Algebras 🌶🌶🌶 (Véronique)	Analysis with Prime Numbers 🌶🌶 (Eric)	Breaking Bad (RSA Encryption) 🌶🌶🌶 (Michael)	(Dys)functional Analysis 🌶🌶 (*Viv Kuperberg*)
	Infinite Trees (1/2) 🌶🌶🌶 (Susan)	Infinite Trees (2/2) 🌶🌶🌶 (Susan)	Everything You Ever Wanted to Know About Finite Fields 🌶🌶🌶 (Eric)	**[HR]** Counting Points over Finite Fields 🌶🌶🌶🌶 (*Aaron Landesman*)
	[HR] Linear Algebra 🌶🌶🌶 (Apurva)	The Probabilistic Method 🌶🌶🌶 (Bill)	Permutation Combinatorics 🌶🌶 (Bill)	Infinite-Ness 🌶🌶🌶 (Susan)
	Not Your Grandparents' Algorithms 🌶🌶 (*Sam Gutekunst*)	Topology 🌶🌶 (Kayla)	Polytopes 🌶🌶 (*Angélica Osorno*) / Fermat's Last Theorem 🌶🌶 (Gabrielle)	Matching Bears With Campers 🌶🌶 (Rice)
	Change Ringing 🌶🌶 (Eric + Tim!)	Young Tableaux and Representation Theory 🌶🌶🌶🌶 (Shiyue)	**[HR]** Quiver Representations 🌶🌶🌶🌶 (Will)	Unique and Nonunique Factorization 🌶🌶🌶 (Gabrielle)

Key: **[HR]**—Homework Required