Math 522 Number Theory

Spring 2024 Calendar

◄ Dec 2023 | **January 2024** | Feb 2024 ►

Sun	Mon	Tue	Wed	Thu	Fri	Sat
21	22 Start of the semester	23 First Day of Class Introductions and Expectations	24	25 Review of Rings, Ideals, and Fields	26	27
28	29	30 Chapter 1.1: Unique Factorization in $\mathbb{Z}$	31 Homework 0 Due			

February 2024

◄ Jan 2024 | Mar 2024 ►

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 Section 1.2: Unique Factorization in k[x]	2	3
4	5	6 Section 1.2: Unique Factorization in k[x]	7 Homework 1 Due	8 Sections 1.3 and 1.4: Unique Factorization in a PID and The Rings Z[i] and Z[ω] Ian: Euclidean domains	9	10
11	12	13 Sections 1.3 and 1.4: Unique Factorization in a PID and The Rings Z[i] and Z[ω]	14	15 Sections 1.3 and 1.4: Unique Factorization in a PID and The Rings Z[i] and Z[ω] SMIMIC Talk	16	17
18	19	20 Sections 2.1 and 2.2: The Infinitude of the Primes and Some Arithmetic Functions (Euler's φ function)	21 Homework 2 Due	22 Sections 2.1 and 2.2: The Infinitude of the Primes and Some Arithmetic Functions (Euler's φ function) Max: Euler's proof of the infinitude of the primes. SMIMIC Talk	23	24
25	26	27 Midterm 1 Section 2.3: $\sum \frac{1}{p}$ Diverges	28	29 Section 2.3: $\sum \frac{1}{p}$ Diverges Section 3.4: Sunzi's Remainder Theorem SMIMIC Talk		

◄ Feb 2024

March 2024

Apr 2024 ►

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5 Section 3.4: Sunzi's Remainder Theorem Gustavo: Solutions to ax=b modulo m	6 Homework 3 Due	7 Section 3.4: Sunzi's Remainder Theorem Yoko: CRT via Youtube	8	9
10	11	12 Section 4.1 Primitive Roots in U(Z/nZ) Section 4.2: n^{th} Power Residues Dylan: Chapter 4, Section 2: Prop 4.2.1	13	14 Quadratic Reciprocity SMIMIC Talk	15	16
17 Spring Break!	18 Spring Break!	19 Spring Break!	20 Spring Break!	21 Spring Break!	22 Spring Break!	23 Spring Break!
24	25	26 Quadratic Reciprocity Jessica: Euler's Criterion. Is -1 a square modulo p?	27 Homework 4 Due	28 Quadratic Reciprocity Diane: Proposition 5.1.3. Is 2 a square modulo p? SMIMIC Talk	29	30

◄ Mar 2024

April 2024

May 2024 ►

Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mar. 31	1 Cesar Chavez Day	2 Midterm 2 Intro to Galois Theory: Field Extensions and Authomorphisms	3	4 Intro to Galois Theory: Field Extensions and Authomorphisms Galois Theory, Quadratics and Cyclotomics SMIMIC Talk	5	6
7	8	9 Intro to Galois Theory: Field Extensions and Authomorphisms Galois Theory, Quadratics and Cyclotomics Iyanna: What is the Galois group of $\mathbf{Q}(\sqrt{d})$?	10	11 Section 12.1: Algebraic Preliminaries Frederick: Prop. 12.1.1	12	13
14 Homework 5 Due	15	16 Monogenicity of Number Fields Talk! Section 12.2: Finiteness of the Class Number, Unique Factorization	17	18 Section 12.2: Finiteness of the Class Number, Unique Factorization Galois Theory of Cyclotomics Abigail: What is the Galois group of $\mathbf{Q}(\zeta_p)$? Taylor: What is the Galois group of $\mathbf{Q}(\zeta_p)$?	19	20
21	22	23 Reid Lecture	24 Homework 6 Due	25 Section 12.3: Ramification and Degree Section 13.1: Quadratic Number Fields	26	27
28	29	30 Section 12.3: Ramification and Degree Section 13.1: Quadratic Number Fields				

◄ Apr 2024

May 2024

Jun 2024 ►

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2 Section 13.2: Cyclotomic Number Fields Section 13.3: Quadratic Reciprocity Revisited SMIMIC Talk	3	4
5	6	7 Kummer's Attack on Fermat's Last Theorem Vistas into Modern Number Theory and Arithmetic Geometry	8 Homework 7 Due	9 Last Day of Class Vistas into Modern Number Theory and Arithmetic Geometry	10	11
12	13	14	15 Final Exam 6:15pm to 8:15pm in Commons 206	16	17	18